



TYPE-CERTIFICATE DATA SHEET

NO. EASA.A.627

for
Ventus-3

Type Certificate Holder
Schempp-Hirth Flugzeugbau GmbH

Krebenstraße 25
73230 Kirchheim/Teck
Germany

For models: Ventus-3T
Ventus-3M
Ventus-3F



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Section A: **Ventus-3T**

A.I General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | Ventus-3 |
| 1.2 Model: | Ventus-3T |
| 2. Airworthiness Category | Powered Sailplane, CS 22 - Utility |
| 3. Manufacturer | Schempp-Hirth Flugzeugbau GmbH
Krebenstraße 25
73230 Kirchheim / Teck
Germany |
| 4. EASA Type Certification Application Date | 30 September 2015 |
| 5. EASA Type Certification Date | 20 July 2018 |

A.II EASA Certification Basis

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements | 30 September 2015 |
| 2. Airworthiness Requirements | Certification Specifications for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5 2009 |
| 3. Special Conditions | None |
| 4. Exemptions | None |
| 5. (Reserved) Deviations | None |
| 6. Equivalent Safety Findings | CS 22.207 (a), (c)
CS 22.335 (f) |
| 7. Environmental Protection | ICAO Annex 16 (details refer to TCDSN EASA.A.627) |



A.III Technical Characteristics and Operational Limitations

1. Type Design Definition List of drawing files Ventus-3T,
Issue April 2018
2. Description Single seat, mid-wing non-self-launching
powered sailplane, CFRP/GFRP/AFRP-construction,
6-piece 18 m wing with Winglets, chamber
changing-flaps, triple-panel Schempp-Hirth type
airbrakes on upper wing surface, water ballast tanks
in wings and fin (optional), CFRP/GFRP/AFRP-
fuselage, retractable main wheel with hydraulic disc
brake, T-shaped horizontal tail (fixed horizontal
stabilizer with elevator, fin and rudder), retractable
power plant with folding propeller.
3. Equipment Min. required Equipment:
 - 1 Air speed indicator (up to 300 km/h)
 - 1 Altimeter
 - 1 Magnetic compass
 - 1 Outside air temperature indicator with sensor
(when flying with water ballast)
 - 1 Engine control unit featuring:
 - RPM indicator
 - Engine hour meter
 - Fuel quantity indicator
 - 1 Rear view mirror
 - 1 4-point harness (symmetrical)
 - 1 Automatic or manual parachute
or
 - 1 Back cushion (thickness approx. 8 cm when
compressed) when flying without
parachuteAdditional equipment refer to Flight and
Maintenance Manual
4. Dimensions

Span:	15,0 m	18,0 m
Wing area:	9,53 m ²	10,84 m ²
		(see AV.4)
Length:	6,63 m	
When according AV.5:		
Length:	6,78 m	
5. Engine
 - 5.1 Model SOLO 2350
 - 5.2 Type Certificate Type Certificate Data Sheet No. EASA.E.219
 - 5.3 Limitations

Maximum RPM:	5800 min ⁻¹
Maximum continuous RPM:	5500 min ⁻¹
 - 5.4 Maximum Continuous Power 15,3 kW



6. Propeller	
6.1 Model	OE-FL 5.83/83 a5, v92
6.2 Type Certificate	Data Sheet No. OE-FL ./83
6.3 Number of blades	5
6.4 Diameter	830 mm +/- 0mm
	Note: Propeller features blades of different lengths ($d_{min}/d = 92%$)
6.5 Sense of Rotation	counter-clockwise
7. Fuel capacities	
7.1 Tank in the fuselage	10,5 l 11,6 l, when according AV.5
7.2 Non-usable fuel	0,3 l
8. Launching Hooks	Safety hook Tost "Europa G 88", LBA Datasheet No. 60.230/2 Nose tow hook Tost "E22", Datasheet 11.402/9NTS
9. Weak Links	Ultimate strength: - for winch- and car launch: max. 825 daN - for aero tow: max. 660 daN
10. Load Factors	+5,3 / -2,65 (up to V_A) +4,0 / -1,5 (up to V_{NE})
11. Air Speeds	Manoeuvring Speed V_A 180 km/h Never exceed speed V_{NE} 280 km/h Maximum permitted speeds - with flaps at 0, -1, -2, S, S1 V_{FE} 280 km/h - with flaps at +2, +1 V_{FE} 180 km/h - with flaps at L V_{FE} 150 km/h - in rough air V_{RA} 180 km/h - for winch / car launching V_W 150 km/h - for aero towing V_T 180 km/h - for gear operation V_{LO} 180 km/h - for extended power plant: Ignition ON V_{MAX1} 150 km/h Ignition OFF V_{MAX2} 180 km/h - for extending / retracting the power plant: V_{POmin} 90 km/h V_{POmax} 120 km/h
12. Approved Operations Capability	VFR Day only Cloud flying permitted Aerobatic manoeuvres not permitted
13. Launch methods	Aero tow Winch launch and car launch



14. Maximum Masses	Max. Mass: With 15 m Wing Span: 525 kg (see AV.4) With 18 m Wing Span: 600 kg Max. Mass of non-lifting parts: Power-plant installed: 320 kg Power-plant removed: 280 kg
15. Centre of Gravity Range	Power-plant installed: 300 mm – 430 mm aft of datum Power-plant removed: 290 mm – 430 mm aft of datum
16. Datum	Wing leading edge at root rib
17. Levelling Means	Wedge 100 : 3,0 on slope of rear top fuselage to be horizontal When according AV.5: Wedge 100 : 4,4 on slope of rear top fuselage to be horizontal
18. Control Surface Deflections	Refer to Maintenance Manual
19. Minimum Flight Crew	1
20. Maximum Passenger Seating Capacity	0
21. Baggage/ Cargo Compartments	2 kg
22. Lifetime limitations	Refer to Flight Manual, section 2



A.IV Operating and Service Instructions

1. Flight Manual
Flight Manual Ventus-3T, Issue April 2018, or later EASA approved revisions
When according AV.4:
Flight Manual Ventus-3T, Issue January 2021, or later EASA approved revisions
When according AV.5:
Flight Manual Ventus-3T "Performance", Issue October 2021, or later EASA approved revisions

2. Maintenance Manual
Maintenance Manual Ventus-3T, Issue April 2018, or later EASA accepted revisions
When according AV.4:
Maintenance Manual Ventus-3T, Issue January 2021, or later EASA accepted revisions
When according AV.5:
Maintenance Manual Ventus-3T "Performance", Issue October 2021, or later EASA accepted revisions

3. Structural Repair Manual
Repair Manual for the GFRP/CFRP powered sailplane model "Ventus-3T", latest applicable issue

4. Operating Manual and Maintenance Manual for Engine
Approved manual for the SOLO Engine type 2350, latest applicable issue, by SOLO Kleinmotoren GmbH

5. Operating Manual and Maintenance Manual for Propeller
Approved manual for the folding propeller type OE-FL ./.83, latest applicable issue, Ingrid Oehler TB GmbH

6. Manual for the Tost release, latest approved issue



A.V Notes

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings, registration and the cockpit area – must have a white colour surface.
3. Approved for operations with power plant temporarily removed or inoperative in accordance with the instructions given in the flight manual.
4. Introduction of option for 15m-wingspan outer wing panels and new issues of Flight and Maintenance Manual with Modification Bulletin 627-2.
5. With Modification Bulletin 627-3 the “Performance-Edition”-fuselage can be used.



Section B: **Ventus-3M**

B.I General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | Ventus-3 |
| 1.2 Model: | Ventus-3M |
| 2. Airworthiness Category | Powered Sailplane, CS 22 - Utility |
| 3. Manufacturer | Schempp-Hirth Flugzeugbau GmbH
Krebenstraße 25
73230 Kirchheim / Teck
Germany |
| 4. EASA Type Certification Application Date | 2 October 2017 |
| 5. EASA Type Certification Date | 15 November 2019 |

B.II EASA Certification Basis

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements | 2 October 2017 |
| 2. Airworthiness Requirements | Certification Specifications for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5 2009 |
| 3. Special Conditions | None |
| 4. Exemptions | None |
| 5. (Reserved) Deviations | None |
| 6. Equivalent Safety Findings | CS 22.207 (a), (c)
CS 22.335 (f) |
| 7. Environmental Protection | ICAO Annex 16 (details refer to TCDSN EASA.A.627) |



B.III Technical Characteristics and Operational Limitations

1. Type Design Definition List of drawing files Ventus-3M,
Issue September 2019
2. Description Single seat, mid-wing powered sailplane,
CFRP/GFRP/AFRP-construction, 6-piece 18 m wing
with Winglets, chamber changing-flaps, triple-panel
Schempp-Hirth type airbrakes on upper wing
surface, water ballast tanks in wings and fin
(optional), CFRP/GFRP/AFRP-fuselage, retractable
main wheel with hydraulic disc brake, T-shaped
horizontal tail (fixed horizontal stabilizer with
elevator, fin and rudder), retractable power plant
with fixed propeller.
3. Equipment Min. required Equipment:
 - 1 Air speed indicator (up to 300 km/h)
 - 1 Altimeter
 - 1 Magnetic compass
 - 1 Outside air temperature indicator with sensor
(when flying with water ballast)
 - 1 Power plant operating unit featuring:
 - RPM indicator
 - Engine hour meter
 - Fuel quantity indicator
 - Coolant liquid temperature indicator
 - Warning signals
 - 1 Rear view mirror
 - 1 4-point harness (symmetrical)
 - 1 Automatic or manual parachute
or
 - 1 Back cushion (thickness approx. 8 cm when
compressed) when flying without parachuteAdditional equipment refer to Flight and
Maintenance Manual
4. Dimensions Span: 18,0 m
Wing area: 10,84 m²
Length: 6,78 m
5. Engine
 - 5.1 Model SOLO 2625, variation SOLO 2625-01 i
When according to BV.4:
SOLO 2625, variation SOLO 2625-01 i neo
 - 5.2 Type Certificate Type Certificate Data Sheet No. EASA.E.218
 - 5.3 Limitations Maximum RPM: 6600 min⁻¹
Maximum continuous RPM: 6250 min⁻¹
 - 5.4 Maximum Continuous Power 45 kW



6. Propeller	
6.1 Model	KS-1G-152-R 122
6.2 Type Certificate	LBA-Data Sheet No. 32.110/18
6.3 Number of blades	2
6.4 Diameter	1580 mm +/-50mm
6.5 Sense of Rotation	counter-clockwise
7. Fuel capacities	
7.1 Tank in the fuselage	13,0 l
7.2 Non-usable fuel	0,3 l
7.3 Tank in wing(s)	optional, see Flight Manual
8. Launching Hooks	Safety hook Tost "Europa G 88", LBA Datasheet No. 60.230/2 Nose tow hook Tost "E22", Datasheet 11.402/9NTS
9. Weak Links	Ultimate strength: - for winch- and car launch: max. 825 daN - for aero tow: max. 660 daN
10. Load Factors	+5,3 / -2,65 (up to V_A) +4,0 / -1,5 (up to V_{NE})
11. Air Speeds	Manoeuvring Speed V_A 180 km/h Never exceed speed V_{NE} 280 km/h Maximum permitted speeds - with flaps at 0, -1, -2, S, S1 V_{FE} 280 km/h - with flaps at +2, +1 V_{FE} 180 km/h - with flaps at L V_{FE} 150 km/h - in rough air V_{RA} 180 km/h - for winch / car launching V_W 150 km/h - for aero towing V_T 180 km/h - for gear operation V_{LO} 180 km/h - for extended power plant V_{MAX} 180 km/h - for extending / retracting the power plant: V_{POmin} 92 km/h V_{POmax} 120 km/h
12. Approved Operations Capability	VFR Day only Cloud flying permitted Aerobatic manoeuvres not permitted
13. Launch methods	Aero tow Winch launch and car launch Self launch
14. Maximum Masses	Max. Mass: 600 kg Max. Mass of non-lifting parts: Power-plant installed: 365 kg Power-plant removed: 320 kg



15. Centre of Gravity Range	Power-plant installed: 320 mm – 430 mm aft of datum Power-plant removed: 300 mm – 430 mm aft of datum
16. Datum	Wing leading edge at root rib
17. Levelling Means	Wedge 100 : 4,4 on slope of rear top fuselage to be horizontal
18. Control Surface Deflections	Refer to Maintenance Manual
19. Minimum Flight Crew	1
20. Maximum Passenger Seating Capacity	0
21. Baggage/ Cargo Compartments	2 kg
22. Lifetime limitations	Refer to Flight Manual, section 2



B.IV Operating and Service Instructions

1. Flight Manual
Flight Manual Ventus-3M, Issue March 2019, or later EASA approved revisions
When according BV.4:
Flight Manual Ventus-3M, Issue February 2021, or later approved revisions
2. Maintenance Manual
Maintenance Manual Ventus-3M, Issue March 2019, or later EASA accepted revisions
When according BV.4:
Maintenance Manual Ventus-3M, Issue February 2021, or later accepted revisions
3. Structural Repair Manual
Repair Manual for the GFRP/CFRP powered sailplane model "Ventus-3M", latest applicable issue
4. Operating Manual and Maintenance Manual for Engine
Approved manual for the SOLO Engine type 2625-01i, latest applicable issue, by SOLO Kleinmotoren GmbH
When according to BV.4:
Approved manual for the SOLO Engine type 2625-01i neo, latest applicable issue, by SOLO Kleinmotoren GmbH
5. Operating Manual and Maintenance Manual for Propeller
Operation and Installation Manual No. P3 for the two blade composite propellers with fixed pitch KS 1 G()()() KS 1 C ()()(), valid issue as appropriate
6. Manual for the Tost release, latest approved issue



B.V Notes

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings, registration and the cockpit area – must have a white colour surface.
3. Approved for operations with power plant temporarily removed or inoperative in accordance with the instructions given in the flight manual.
4. Introduction of new engine variant SOLO 2625-01 I neo and new issues of Flight and Maintenance Manuals with Modification Bulletin 627-1.



Section C: Ventus-3F

C.I General

- | | |
|---|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type: | Ventus-3 |
| 1.2 Model: | Ventus-3F |
| 2. Airworthiness Category | Powered Sailplane, CS 22 - Utility |
| 3. Manufacturer | Schempp-Hirth Flugzeugbau GmbH
Krebenstraße 25
73230 Kirchheim / Teck
Germany |
| 4. EASA Type Certification Application Date | 04 May 2017 |
| 5. EASA Type Certification Date | 8 Juni 2022 |

C.II EASA Certification Basis

- | | |
|---|---|
| 1. Reference Date for determining the applicable requirements | 04 May 2017 |
| 2. Airworthiness Requirements | Certification Specifications for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5 2009 |
| 3. Special Conditions | SC.22-2014-01 Installation of Electric Propulsion in sailplanes, SC E-01 Airworthiness Standard for CS-22H Electrical Retractable Engine to be operated in Powered Sailplanes |
| 4. Exemptions | None |
| 5. (Reserved) Deviations | None |
| 6. Equivalent Safety Findings | CS 22.207 (c)(1), CS 22.335 (f) |
| 7. Environmental Protection | ICAO Annex 16 (details refer to TCDSN EASA.A.627) |



C.III Technical Characteristics and Operational Limitations

1. Type Design Definition List of drawing files Ventus-3F,
Issue July 2021
2. Description Single seat, mid-wing non-self-launching
powered sailplane, CFRP/GFRP/AFRP-construction,
6-piece 18 m wing with Winglets, chamber
changing-flaps, triple-panel Schempp-Hirth type
airbrakes on upper wing surface, water ballast tanks
in wings and fin (optional), CFRP/GFRP/AFRP-
fuselage, retractable main wheel with hydraulic disc
brake, T-shaped tail (fixed horizontal stabilizer with
elevator, fin and rudder), electric motor with
foldable propeller in nose.
3. Equipment Min. required Equipment:
 - 1 Air speed indicator (up to 300 km/h)
 - 1 Altimeter
 - 1 Magnetic compass
 - 1 Outside air temperature indicator with sensor
(when flying with water ballast)
 - 1 Engine control unit FCU:
 - RPM indicator
 - Engine time
 - Battery level (V meter, A meter)
 - Motor temperature
 - 1 4-point harness (symmetrical)
 - 1 Automatic or manual parachute
or
 - 1 Back cushion (thickness approx. 8 cm when
compressed) when flying without parachuteAdditional equipment refer to Flight and
Maintenance Manual
4. Dimensions Span: 18,0 m
Wing area: 10,84 m²
Length: 6,63 m
5. Engine
 - 5.1 Model FES-VEN-M100
Outrunner BLDC brushless synchronous permanent
Magnet motor with electronically controlled
commutation system 3 phase
 - 5.2 Type Certificate
Limitations accepted as part of the aircraft
Maximum Temperature: 90°C
Max. continuous Temperature: 70°C



6. Propeller	
6.1 Model	FES-VEN-P1-102, traktor type
6.2 Type Certificate	accepted as part of the aircraft
6.3 Number of blades	2
6.4 Diameter	1000 mm +20/- 0mm
6.5 Sense of Rotation	clockwise
6.6 Limitations	4300 RPM max. continuous rotational speed 4500 RPM maximum rotational speed
7. Fuel capacities	N/A
8. Launching Hooks	Safety hook Tost "Europa G 88", LBA Datasheet No. 60.230/2 Nose tow hook Tost "E 85", LBA Datasheet No. 60.230/2
9. Weak Links	Ultimate strength: - for winch- and car launch: max. 825 daN - for aero tow: max. 660 daN
10. Load Factors	+5,3 / -2,65 (up to V_A) +4,0 / -1,5 (up to V_{NE})
11. Air Speeds	Manoeuvring Speed V_A 180 km/h Never exceed speed V_{NE} 280 km/h Maximum permitted speeds - with flaps at 0, -1, -2, S, S1 V_{FE} 280 km/h - with flaps at +2, +1 V_{FE} 180 km/h - with flaps at L V_{FE} 150 km/h - in rough air V_{RA} 180 km/h - for winch / car launching V_W 150 km/h - for aero towing V_T 180 km/h - for gear operation V_{LO} 180 km/h - for engine operation and for engine start: V_{POmax} 160 km/h
12. Approved Operations Capability	VFR Day only Cloud flying permitted Aerobatic manoeuvres not permitted
13. Launch methods	Aero tow Winch launch and car launch
14. Maximum Masses	Max. Mass: With 18 m Wing Span: 600 kg Max. Mass of non-lifting parts: FES-Batteries installed: 320 kg FES-Batteries removed: 280 kg
15. Centre of Gravity Range	FES-Batteries installed: 300 mm – 430 mm aft of datum FES-Batteries removed: 290 mm – 430 mm aft of datum
16. Datum	Wing leading edge at root rib



17. Levelling Means	Wedge 100 : 3,0 on slope of rear top fuselage to be horizontal
18. Control Surface Deflections	Refer to Maintenance Manual
19. Minimum Flight Crew	1
20. Maximum Passenger Seating Capacity	0
21. Baggage/ Cargo Compartments	2 kg
22. Lifetime limitations	Refer to Flight Manual, section 2



C.IV Operating and Service Instructions

- | | |
|---|--|
| 1. Flight Manual | Flight Manual Ventus-3F, Issue August 2021 |
| 2. Maintenance Manual | Maintenance Manual Ventus-3F, Issue August 2021 |
| 3. Structural Repair Manual | Repair Manual for the GFRP/CFRP powered sailplane model "Ventus-3F", latest applicable issue |
| 4. Manual for the Tost release, latest approved issue | |



C.V Notes

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings, registration and the cockpit area – must have a white colour surface.
3. Approved for operations with FES-Batteries and/or propeller temporarily removed in accordance with the instructions given in the flight manual.
4. Engine and propeller are accepted as part of the aircraft according to PART 21.A.23(b)(2).



Section D: Administrative Section

D.I Acronyms & Abbreviations

AFRP	Aramid Fibre Reinforced Plastic
CFRP	Carbon Fibre Reinforced Plastic
GFRP	Glass Fibre Reinforced Plastic
CRI	Certification Review Item
CS	Certification Specification
EASA	European Union Aviation Safety Agency
LBA	Luftfahrt-Bundesamt
VFR	Visual Flight Rules

D.II Type Certificate Holder Record

Schempp-Hirth Flugzeugbau GmbH
Krebenstr. 25
73230 Kirchheim / Teck
Germany

D.III Change Record

Issue	Date	Changes	TC Issue No. & Date
01	20 July 2018	Initial Issue	Initial Issue, 20. July 2018
02	01 July 2019	Some editorial and layout changes.	
03	15 November 2019	Addition of new model Ventus-3M	15 November 2019
04	28 April 2021	Introduction of 15m-wingtips for variant Ventus-3T and some editorial changes	n/a
05	15 October 2021	Introduction of modification bulletin 627-1 for Ventus-3M	n/a
06	22 July 2022	Introduction of new model Ventus-3F Introduction of modification bulletin 627-3 for Ventus 3T Some editorial changes	08 June 2022

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