Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.A.00005

for

Ventus-3

Type Certificate Holder

Schempp-Hirth Flugzeugbau GmbH

Krebenstraße 25

73230 Kirchheim/Teck

Germany

Model(s):	Ventus-3T Ventus-3M Ventus-3F
Issue:	3
Date of issue:	15 December 2022

TABLE OF CONTENTS

Section 1 Ventus-3T

I. General

1. Type / Variant or Model

Type	Ventus-3
Variant or Model	Ventus-3T

2. Airworthiness Category

Powered Sailplane, CS 22 - Utility

3. Type Certificate Holder

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

II. Certification Basis

1. Reference Date for determining the applicable requirements

30 September 2015

2. Airworthiness Requirements

Certification Specification for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5, 2009

3. Special Conditions

None

4. Exemptions

None

5. 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 UK.TC.A.00005)

III. Technical Characteristic and Operating 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/AFRPfuselage, 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

Minimum required equipment:

1 Air speed indicator (up to 300 km/h / 162 kts)

1 Altimeter

1 Magnetic Compass

1 Outside air temperature indicator (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 parachute

With engine installed:

Additional equipment refer to Flight and Maintenance Manual

4. Dimensions

Span:	15.0m	18m
Wing Area:	9.53m^2	10.84m^2
Length:	6.63m	6.63m

(see Note 1V.4)

5. Engine

Model	SOLO 2350	
Type Certificate	EASA.E.219	
Limitations	Maximum RPM:	5800 min-1
	Maximum Continuous RPM:	5500 min-1
	Maximum Continuous Power	15.3 kW

6. Propeller

Model	OE-FL 5.83/83 a5, v92
Type Certificate	Data Sheet No. OE-FL ./83
Number of blades	5
Diameter	830 mm +/- 0mm
	Note: Propeller features blades of different lengths (dmin/d = 92%)
Sense of Rotation	Counter-clockwise

7. Fuel Capacities

Fuselage Fuel Tank:	Max. capacity: 10.5L
	Non-usable fuel: 0.3L

8. Launching Hooks

Safety hook Tost “Europa G 88”, LBA Datasheet No. 60.230/2

Nose tow hook Tost “E 22”, LBA Datasheet No. 11.402/9 NTS

9. Weak Links

	Ultimate Strength
Winch & car launch	Max. 825 daN
Aerotow:	Max. 660 daN

10. Load Factors

Up to V_A	+5.3g / -2.65g
Up to V_{NE}	+4.0g / -1.5g

11. Air Speeds

Manoeuvring Speed V_A	180 km/h (97 kts)
Never Exceed Speed V_{NE}	280 km/h (151 kts)
Maximum Permitted Speeds:	
With flaps at 0,-1,-2, S, S1 $V_{FE\ 0,-1,-2,\ S,\ S1}$	280 km/h (151 kts)
With flaps at +2,+1 $V_{FE\ +2,+1}$	180 km/h (97 kts)
With flaps at L $V_{FE\ L}$	150 km/h (81 kts)
In strong Turbulence V_{RA}	180 km/h (97 kts)
During Winch Launch V_W	150 km/h (81 kts)
During Aerotow V_T	180 km/h (97 kts)
Gear operation V_{LO}	180 km/h (97 kts)
With powerplant extended	
Ignition ON V_{MAX1}	150 km/h (81 kts)
Ignition OFF V_{MAX2}	180 km/h (97 kts)
Extending/ Retracting the Powerplant	
$V_{PO,\ MIN}$	90 km/h (50 kts)
$V_{PO,\ MAX}$	120 km/h (65 kts)

12. Approved Operations Capability

VFR Day only

Cloud flying permitted

Aerobatic manoeuvres not permitted

13. Launch methods

Aero tow

Winch and car launch

14. Maximum Masses

Maximum Mass:

With 15m wing span: 525kg (See Note 1V.4)

With 18m wing span: 600kg

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

Wedge 100 . 4.4 on slope of rear top fuselage to be horizontal (see Note 1V.5)

18. Control Surface Deflections

Refer to Maintenance Manual

19. Minimum Flight Crew

1

20. Maximum Passenger Seating Capacity

0

21. Baggage/Cargo Compartments

2kg

22. Lifetime limitations

Refer to Maintenance Manual, section 2

IV. Operating and Service Instructions

1. Flight Manual

Flight Manual Ventus-3T, Issue April 2018, or later EASA approved revisions

When according to Note 1V.4: Flight Manual Ventus-3T, Issue January 2021, or later EASA approved revisions

When according to Note 1V5: 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 to Note 1V.4: Maintenance Manual Ventus-3T, Issue January 2021, or later EASA accepted revisions

When according to Note 1V.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 and Maintenance Manual for Propeller

Approved manual for the folding propeller type OEFL ./83, latest applicable issue, Ingrid Oehler TB GmbH

6. Manual for the Tost release

Latest approved issue

V. Notes

1. Production 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 theinstructions given in the flight manual.

4. Introduction of 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 2 Ventus-3M

I. General

1. Type / Variant or Model

Type	Ventus-3
Variant or Model	Ventus-3M

2. Airworthiness Category

Powered Sailplane, CS 22 - Utility

3. Type Certificate Holder

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

II. Certification Basis

1. Reference Date for determining the applicable requirements

2 October 2017

2. Airworthiness Requirements

Certification Specification for Sailplanes and Powered Sailplanes CS 22, Amend. 2, effective on March 5, 2009

3. Special Conditions

None

4. Exemptions

None

5. 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 UK.TC.A.00005)

III. Technical Characteristic and Operating 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

Minimum required equipment:

1 Air speed indicator (up to 300 km/h / 162 kts)

1 Altimeter

1 Magnetic Compass

1 Outside air temperature indicator (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 parachute

With engine installed:

Additional equipment refer to Flight and Maintenance Manual

4. Dimensions

Span:	18m
Wing Area:	10.84m^2
Length:	6.78m

5. Engine

Model	SOLO 2625, variation SOLO 2625-01 i
	When according to Note 2V.4:
	SOLO 2625, variation SOLO 2625-01 i neo
Type Certificate	EASA.E.218

Limitations	Maximum RPM:	6600 min^{-1}
	Maximum Continuous RPM:	6250 min^{-1}
	Maximum Continuous Power:	45 KW

6. Propeller

Model	KS-1G-152-R 122
Type Certificate	LBA-Data Sheet No. 32.110/18
Number of blades	2
Diameter	1580 mm +/- 50mm
Sense of Rotation	Counter-clockwise

7. Fluid Capacities

Fuselage Fuel Tank:	Max. capacity: 10.5L
	Non-usable fuel: 0.3L
Wing Fuel Tank(s)	Optional, see Flight Manual

8. Launching Hooks

1) Safety hook Tost “Europa G 88”, LBA Datasheet No. 60.230/2
2) Nose tow hook Tost “E 22”, LBA Datasheet No. 11.402/9 NTS

9. Weak Links

Ultimate Strength:	
Winch & car launch	Max. 825 daN
Aerotow:	Max. 660 daN

10. Load Factor

Up to V_A	+5.3g / -2.65g
Up to V_{NE}	+4.0g / -1.5g

11. Air Speeds

Manoeuvring Speed V_A	180 km/h (97 kts)
Never Exceed Speed V_{NE}	280 km/h (151 kts)
Maximum Permitted Speeds:	
With flaps at 0,-1,-2, S, S1 $V_{FE\ 0,-1,-2,\ S,\ S1}$	280 km/h (151 kts)
With flaps at +2,+1 $V_{FE\ +2,+1}$	180 km/h (97 kts)
With flaps at L $V_{FE\ L}$	150 km/h (81 kts)
In strong Turbulence V_{RA}	180 km/h (97 kts)
During Winch Launch V_W	150 km/h (81 kts)
During Aerotow V_T	180 km/h (97 kts)
Gear operation V_{LO}	180 km/h (97 kts)
With powerplant extended V_{MAX}	180 km/h (97 kts)
Extending/ Retracting the Powerplant	
$V_{PO,\ MIN}$	92 km/h (50 kts)
$V_{PO,\ MAX}$	120 km/h (65 kts)

12. Approved Operations Capability

VFR Day only

Cloud flying permitted

Aerobatic manoeuvres not permitted

13. Launch methods

Aero tow

Winch and car launch

Self launch

14. Maximum Masses

Maximum Mass:	600kg
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

2kg

22. Lifetime limitations

Refer to Maintenance Manual, section 2

IV. Operating and Service Instructions

1. Flight Manual

Flight Manual Ventus-3M, Issue March 2019 or later EASA approved revisions

When according to Note 2V.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 to Note 2V.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- 01 i, latest applicable issue, by SOLO Kleinmotoren GmbH

When according to Note 2V.4:

Approved manual for the SOLO Engine type 2625-01 i neo, latest applicable issue, by SOLO Kleinmotoren GmbH

5. Operating 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

V. Notes

1. Production 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 theinstructions 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 3 Ventus-3F

I. General

1. Type / Variant or Model

Type	Ventus-3
Variant or Model	Ventus-3F

2. Airworthiness Category

Powered Sailplane, CS 22 - Utility

3. Type Certificate Holder

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 June 2022

II. Certification Basis

1. Reference Date for determining the applicable requirements

4 May 2017

2. Airworthiness Requirements

Certification Specification 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 insailplanes, SC E-01 Airworthiness Standard for CS-22H Electrical Retractable Engine to be operated in Powered Sailplanese

4. Exemptions

None

5. 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 UK.TC.A.00005)

III. Technical Characteristic and Operating 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

Minimum required equipment:

1 Air speed indicator (up to 300 km/h / 162 kts)

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 parachute

Additional equipment refer to Flight and Maintenance Manual

4. Dimensions

Span:	18m
Wing Area:	10.84m^2
Length:	6.63m

5. Engine

Model	FES-VEN-M100	
	Outrunner BLDC brushless synchronous permanent magnet motor with electronically controlled commutation system 3 phase	
Type Certificate	accepted as part of the aircraft	
Limitations	Maximum Temperature:	90°C
	Maximum Continuous Temperature:	70°C

6. Propeller

Model	FES-VEN-P1-102, traktor type
Type Certificate	accepted as part of the aircraft
Number of blades	2
Diameter	1000 mm +20/ -0mm
Sense of Rotation	clockwise
Limitations	4300 RPM max. continuous rotational speed
	4500 RPM maximum rotational speed

7. Fuel Capacities

N/A

8. Launching Hooks

1) Safety hook Tost “Europa G 88”, LBA Datasheet No. 60.230/2
2) Nose tow hook Tost “E 85”, LBA Datasheet No. 60.230/2

9. Weak Links

Ultimate Strength:	
Winch & car launch	Max. 825 daN
Aerotow:	Max. 660 daN

10. Load Factor

Up to V_A	+5.3g / -2.65g
Up to V_{NE}	+4.0g / -1.5g

11. Air Speeds

Manoeuvring Speed V_A	180 km/h (97 kts)
Never Exceed Speed V_{NE}	280 km/h (151 kts)

Maximum Permitted Speeds:

With flaps at 0,-1,-2, S, S1 $V_{FE\ 0,-1,-2,\ S,\ S1}$	280 km/h (151 kts)
With flaps at +2,+1 $V_{FE\ +2,+1}$	180 km/h (97 kts)
With flaps at L $V_{FE\ L}$	150 km/h (81 kts)
In rough air V_{RA}	180 km/h (97 kts)
During Winch Launch V_W	150 km/h (81 kts)
During Aerotow V_T	180 km/h (97 kts)
Gear operation V_{LO}	180 km/h (97 kts)
Engine operation and start $V_{PO,\ MAX}$	160 km/h (65 kts)

12. Approved Operations Capability

VFR Day only

Cloud flying permitted

Aerobatic manoeuvres not permitted

13. Launch methods

Aero tow

Winch and car launch

14. Maximum Masses

Maximum Mass:

With 18m Wing Span:	600kg
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

2kg

22. Lifetime limitations

Refer to Flight Manual, section 2

IV. Operating and Service Instructions

1. Flight Manual

Flight Manual Ventus-3F, Issue August 2021

2. Maintenance Manual

Maintenance Manual Ventus-3F, Issue August 202

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

V. Notes

1. Production 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 withthe 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 4 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
AFRP	Aramid Fibre Reinforced Plastic
CFRP	Carbon Fibre Reinforced Plastic
GFRP	Glass Fibre Reinforced Plastic
CS	Certification Specification
CAA	Civil Aviation Authority
EASA	European Union Aviation Safety Agency
FES	Front Electric Sustainer
g	Load Factor
kg	Kilogram
L	Litres
LBA	Luftfahrt-Bundesamt
min	Minute
RPM	Revolutions per minute
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCH	Type Certificate Holder
VFR	Visual Flight Rules

II. Type Certificate Holder Record

TCH Record	Period
Schempp-Hirth Flugzeugbau GmbH Krebenstr. 25 73230 Kirchheim / Teck Germany	Present. No changes.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	09 Aug 2021	This certificate supersedes EASA.A.627. All technical data taken from EASA.A.627 Issue 3. Introduction of 15-m wingtips for variant Ventus-3T and some editorial changes (as per EASA.A.627 Issue 4).	Issue 1 09 Aug 2021
2	23 March 2022	Introduction of Modification Bulletin 627-1 for Ventus-3M (as per EASA.A.627 Issue 5). Some editorial changes from Issue 1.	
3	15 Dec 2022	Introduction of variant Ventus 3F Introduction of modification bulletin 627-3 for Ventus 3T	Issue 2 15 Dec 2022

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