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# 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  
Ventus-3E



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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<br>Krebenstraße 25<br>73230 Kirchheim / Teck<br>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)<br>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,<br>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:<br>1 Air speed indicator (up to 300 km/h)<br>1 Altimeter<br>1 Magnetic compass<br>1 Outside air temperature indicator with sensor (when flying with water ballast)<br>1 Engine control unit featuring:<br>- RPM indicator<br>- Engine hour meter<br>- Fuel quantity indicator<br>1 Rear view mirror<br>1 4-point harness (symmetrical)<br>1 Automatic or manual parachute<br>or<br>1 Back cushion (thickness approx. 8 cm when compressed) when flying without parachute<br>Additional equipment refer to Flight and Maintenance Manual |
| 4. Dimensions                | Span: 15,0 m 18,0 m<br>Wing area: 9,53 m <sup>2</sup> 10,84 m <sup>2</sup><br>(see AV.4)<br>Length: 6,63 m<br>When according AV.5:<br>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 <sup>-1</sup><br>Maximum continuous RPM: 5500 min <sup>-1</sup>  |
| 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<br>Note:<br>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<br>Datasheet No. 60.230/2<br>Nose tow hook Tost "E22", Datasheet 11.402/9NTS  |
| 9. Weak Links                      | Ultimate strength:<br>- for winch- and car launch:    max. 825 daN<br>- for aero tow:                      max. 660 daN   |
| 10. Load Factors                   | +5,3 / -2,65 (up to $V_A$ )<br>+4,0 / -1,5 (up to $V_{NE}$ )  |
| 11. Air Speeds                     | Manoeuvring Speed $V_A$ 180 km/h<br>Never exceed speed $V_{NE}$ 280 km/h<br>Maximum permitted speeds<br>- with flaps at 0, -1, -2, S, S1 $V_{FE}$ 280 km/h<br>- with flaps at +2, +1 $V_{FE}$ 180 km/h<br>- with flaps at L $V_{FE}$ 150 km/h<br>- in rough air $V_{RA}$ 180 km/h<br>- for winch / car launching $V_W$ 150 km/h<br>- for aero towing $V_T$ 180 km/h<br>- for gear operation $V_{LO}$ 180 km/h<br>- for extended power plant:<br>Ignition ON $V_{MAX1}$ 150 km/h<br>Ignition OFF $V_{MAX2}$ 180 km/h<br>- for extending / retracting the power plant:<br>$V_{POmin}$ 90 km/h<br>$V_{POmax}$ 120 km/h |
| 12. Approved Operations Capability | VFR Day only<br>Cloud flying permitted<br>Aerobatic manoeuvres not permitted  |
| 13. Launch methods                 | Aero tow<br>Winch launch and car launch   |



|  |  |
|--|--|
| 14. Maximum Masses                     | Max. Mass:<br>With 15 m Wing Span: 525 kg (see AV.4)<br>With 18 m Wing Span: 600 kg<br>Max. Mass of non-lifting parts:<br>Power-plant installed: 320 kg<br>Power-plant removed: 280 kg |
| 15. Centre of Gravity Range            | Power-plant installed:<br>300 mm – 430 mm aft of datum<br>Power-plant removed:<br>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<br>When according AV.5:<br>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<br>Krebenstraße 25<br>73230 Kirchheim / Teck<br>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)<br>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 m<sup>2</sup>
  - 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<sup>-1</sup>  
Maximum continuous RPM: 6250 min<sup>-1</sup>
  - 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<br>Datasheet No. 60.230/2<br>Nose tow hook Tost "E22", Datasheet 11.402/9NTS   |
| 9. Weak Links                      | Ultimate strength:<br>- for winch- and car launch: max. 825 daN<br>- for aero tow: max. 660 daN  |
| 10. Load Factors                   | +5,3 / -2,65 (up to $V_A$ )<br>+4,0 / -1,5 (up to $V_{NE}$ )   |
| 11. Air Speeds                     | Manoeuvring Speed $V_A$ 180 km/h<br>Never exceed speed $V_{NE}$ 280 km/h<br>Maximum permitted speeds<br>- with flaps at 0, -1, -2, S, S1 $V_{FE}$ 280 km/h<br>- with flaps at +2, +1 $V_{FE}$ 180 km/h<br>- with flaps at L $V_{FE}$ 150 km/h<br>- in rough air $V_{RA}$ 180 km/h<br>- for winch / car launching $V_W$ 150 km/h<br>- for aero towing $V_T$ 180 km/h<br>- for gear operation $V_{LO}$ 180 km/h<br>- for extended power plant $V_{MAX}$ 180 km/h<br>- for extending / retracting the power plant:<br>$V_{POmin}$ 92 km/h<br>$V_{POmax}$ 120 km/h |
| 12. Approved Operations Capability | VFR Day only<br>Cloud flying permitted<br>Aerobatic manoeuvres not permitted   |
| 13. Launch methods                 | Aero tow<br>Winch launch and car launch<br>Self launch   |
| 14. Maximum Masses                 | Max. Mass: 600 kg<br>Max. Mass of non-lifting parts:<br>Power-plant installed: 365 kg<br>Power-plant removed: 320 kg   |



|  |  |
|--|--|
| 15. Centre of Gravity Range            | Power-plant installed:<br>320 mm – 430 mm aft of datum<br>Power-plant removed:<br>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<br>Krebenstraße 25<br>73230 Kirchheim / Teck<br>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 m<sup>2</sup>
  - 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<br>4500 RPM maximum rotational speed  |
| 7. Fuel capacities                 | N/A   |
| 8. Launching Hooks                 | Safety hook Tost "Europa G 88", LBA<br>Datasheet No. 60.230/2<br>Nose tow hook Tost "E 85", LBA<br>Datasheet No. 60.230/2   |
| 9. Weak Links                      | Ultimate strength:<br>- for winch- and car launch: max. 825 daN<br>- for aero tow: max. 660 daN   |
| 10. Load Factors                   | +5,3 / -2,65 (up to $V_A$ )<br>+4,0 / -1,5 (up to $V_{NE}$ )  |
| 11. Air Speeds                     | Manoeuvring Speed $V_A$ 180 km/h<br>Never exceed speed $V_{NE}$ 280 km/h<br>Maximum permitted speeds<br>- with flaps at 0, -1, -2, S, S1 $V_{FE}$ 280 km/h<br>- with flaps at +2, +1 $V_{FE}$ 180 km/h<br>- with flaps at L $V_{FE}$ 150 km/h<br>- in rough air $V_{RA}$ 180 km/h<br>- for winch / car launching $V_W$ 150 km/h<br>- for aero towing $V_T$ 180 km/h<br>- for gear operation $V_{LO}$ 180 km/h<br>- for engine operation and<br>for engine start: $V_{POmax}$ 160 km/h |
| 12. Approved Operations Capability | VFR Day only<br>Cloud flying permitted<br>Aerobatic manoeuvres not permitted  |
| 13. Launch methods                 | Aero tow<br>Winch launch and car launch   |
| 14. Maximum Masses                 | Max. Mass:<br>With 18 m Wing Span: 600 kg<br>Max. Mass of non-lifting parts:<br>FES-Batteries installed: 320 kg<br>FES-Batteries removed: 280 kg  |
| 15. Centre of Gravity Range        | FES-Batteries installed:<br>300 mm – 430 mm aft of datum<br>FES-Batteries removed:<br>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: Ventus-3E**

**D.I General**

- |   |  |
|---|--|
| 1. Type/ Model/ Variant                     |  |
| 1.1 Type:                                   | Ventus-3   |
| 1.2 Model:                                  | Ventus-3E  |
| 2. Airworthiness Category                   | Powered Sailplane, CS 22 - Utility   |
| 3. Manufacturer                             | Schempp-Hirth Flugzeugbau GmbH<br>Krebenstraße 25<br>73230 Kirchheim / Teck<br>Germany |
| 4. EASA Type Certification Application Date | 24 July 2023   |
| 5. EASA Type Certification Date             | 13 June 2025   |

**D.II EASA Certification Basis**

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 24 July 2023   |
| 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            |
| 4. (Reserved) Deviations                                      | None   |
| 5. Equivalent Safety Findings                                 | CS 22.207 (a) (c), CS 22.335 (f)   |
| 6. Environmental Protection                                   | ICAO Annex 16 (details refer to TCDSN EASA.A.627)  |



### **D.III Technical Characteristics and Operational Limitations**

1. Type Design Definition  
List of drawing files Ventus-3E,  
Issue February 2025
2. Description  
Single seat, mid-wing self-launching powered sailplane, CFRP/GFRP/AFRP-construction, 6-piece 18/15 m wing with Winglets, chamber changing-flaps, triple-panel Schempp-Hirth type airbrakes on upper wing surface, water ballast tanks in wings and fin, CFRP/GFRP/AFRP-fuselage, retractable main wheel with hydraulic disc brake, T-shaped tail (fixed horizontal stabilizer with elevator, fin and rudder), retractable electric motor 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 Engine control unit DCU:
    - RPM indicator
    - Engine time
    - Battery level (V meter, A meter)
    - Battery temperature
    - Motor temperature
    - Controller 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:      | 15m                 | 18,0 m               |
| Wing area: | 9,53 m <sup>2</sup> | 10,84 m <sup>2</sup> |
| Length:    | 6,63m               | 6,63 m               |
5. Engine
  - 5.1 Model  
SOLO 8000/401 System  
axial flux motor, 228mm in diameter with two resolvers for determination of RPM and position  
Outrunner BLDC brushless synchronous permanent
  - 5.2 Type Certificate  
EASA.E.237
  - 5.3 Limitations

|                               |         |
|-------------------------------|---------|
| Maximum revs.:                | 3500rpm |
| Max. continuous revs.:        | 3200rpm |
| Max. over speed revs.:        | 3200rpm |
| Max. motor temperature:       | 120°C   |
| Max. power electronics temp.: | 85°C    |



|                                    |   |
|------------------------------------|---|
| 6. Propeller                       |   |
| 6.1 Model                          | SHK 1-1-140 R96-N1  |
| 6.2 Type Certificate               | accepted as part of the aircraft  |
| 6.3 Number of blades               | 2   |
| 6.4 Diameter                       | 1400 mm +10/- 10mm  |
| 6.5 Sense of Rotation              | clockwise   |
| 6.6 Limitations                    | 3200 RPM maximum rotational speed   |
| 7. Fuel capacities                 | N/A   |
| 8. Battery                         | Model: Battery BM384<br>Battery capacity: 11.2Ah<br>Non-usable battery capacity: 1.0 Ah(~10%)<br>Max battery discharge temperature: 70°C<br>Min battery discharge temperature: -20°C<br>Max battery charge temperature: 50°C<br>Min battery charge temperature: 0°C<br>Range of permissible cell voltage: 2,5-4,2V  |
| 9. Launching Hooks                 | Safety hook Tost "Europa G 88", LBA<br>Datasheet No. 60.230/2<br>Nose tow hook Tost "E 85", LBA<br>Datasheet No. 60.230/2   |
| 10. Weak Links                     | Ultimate strength:<br>- for winch- and car launch: max. 825 daN<br>- for aero tow: max. 660 daN   |
| 11. Load Factors                   | +5,3 / -2,65 (up to $V_A$ )<br>+4,0 / -1,5 (up to $V_{NE}$ )  |
| 12. Air Speeds                     | Manoeuvring Speed $V_A$ 180 km/h<br>Never exceed speed $V_{NE}$ 280 km/h<br>Maximum permitted speeds<br>- with flaps at 0, -1, -2, S, S1 $V_{FE}$ 280 km/h<br>- with flaps at +2, +1 $V_{FE}$ 180 km/h<br>- with flaps at L $V_{FE}$ 150 km/h<br>- in rough air $V_{RA}$ 180 km/h<br>- for winch / car launching $V_W$ 150 km/h<br>- for aero towing $V_T$ 180 km/h<br>- for gear operation $V_{LO}$ 180 km/h<br>- for engine operation and<br>for engine start: $V_{POmax}$ 160 km/h |
| 13. Approved Operations Capability | VFR Day only<br>Cloud flying permitted<br>Aerobatic manoeuvres not permitted  |
| 14. Launch methods                 | Aero tow<br>Winch launch and car launch<br>Self launch  |



|  |   |
|--|---|
| 15. Maximum Masses                     | Max. Mass:<br>With 18m wingspan: 600 kg<br>With 15m wingspan: 525 kg<br>Max. Mass of non-lifting parts:<br>Engine and batteries installed: 365 kg<br>Engine and Batteries removed: 320 kg |
| 16. Centre of Gravity Range            | Engine and Batteries installed:<br>320 mm – 430 mm aft of datum<br>Engine and Batteries removed:<br>300 mm – 430 mm aft of datum  |
| 17. Datum                              | Wing leading edge at root rib   |
| 18. Levelling Means                    | Wedge 100 : 3,0 on slope of rear top fuselage to be horizontal  |
| 19. Control Surface Deflections        | Refer to Maintenance Manual   |
| 20. Minimum Flight Crew                | 1   |
| 21. Maximum Passenger Seating Capacity | 0   |
| 22. Baggage/ Cargo Compartments        | 2 kg  |
| 23. Lifetime limitations               | Refer to Flight Manual, section 2   |

#### **D.IV Operating and Service Instructions**

1. Flight Manual Flight Manual Ventus-3E, Issue February 2025
2. Maintenance Manual Maintenance Manual Ventus-3F, Issue February 2025
3. Structural Repair Manual Repair Manual for the GFRP/CFRP powered sailplane model "Ventus-3E", latest applicable issue
4. Operating Manual and Maintenance Manual for Engine Approved manual for the SOLO Engine 80401, latest applicable issue, by SOLO Kleinmotoren GmbH
5. Operating Manual and Maintenance Manual for Propeller "Betriebshandbuch für den Propeller SHK 1", latest applicable issue
6. Manual for the Tost release, latest approved issue

#### **D.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. Propeller is accepted as part of the aircraft according to PART 21.A.23(b)(2).



**Section E: Administrative Section**

**E.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                   |

**E.II Type Certificate Holder Record**

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

**E.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<br>Introduction of modification bulletin 627-3 for Ventus 3T<br>Some editorial changes | 08 June 2022                 |
| 07    | 28.02.2025       | Addition of new model Ventus-3E  | 31 March 2025                |
| 08    | 07 July 2025     | Section D.III – Eng /Prop/ limits - MTOM 15m - added.  |                              |

-END-

