TYPE-CERTIFICATE DATA SHEET

No. E.237

for
SOLO 8000 series engines

Type Certificate Holder
SOLO Kleinmotoren GmbH

Stuttgarter Strasse 41
71069 Sindelfingen
Germany

For Models: SOLO 8000/400

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TABLE OF CONTENTS

I. General

1. Type/ Model/ Variants
SOLO 8000 / SOLO 8000/400

2. Type Certificate Holder
SOLO Kleinmotoren GmbH
Stuttgarter Strasse 41
71069 Sindelfingen
Germany

Design Organisation Approval ADOAP: AP.136

3. Manufacturer
SOLO Vertriebs- und Entwicklungs-GmbH
Stuttgarter Strasse 41
71069 Sindelfingen
Germany

Production Organisation Approval DE.21G.0032

4. Date of Application
25.02.2019

5. EASA Type Certification Date
12.06.2023

II. Certification Basis

1. State of Design Authority Certification Basis
Not applicable

2. Reference Date for determining the applicable airworthiness requirements
Refer to section 4 (Date of Application) of Part I. General

3. EASA Certification Basis

3.1. Airworthiness Standards
CS-22 Amdt.3, Subpart H

3.2. Special Conditions (SC)
SC-22.2014-01 Installation of electric propulsion units in powered sailplanes

3.3. Equivalent Safety Findings
None

3.4. Deviations
None

3.5. Environmental Protection

Not applicable for electrical engine

III. Technical Characteristics

1. Type Design Definition

Master document list SOLO 80400, issue 27 January 2023

2. Description

Electric propulsion system for powered sailplanes consisting of air-cooled axial-flux synchronous permanent magnet electric motor EMRAX 208 HV, controller SOLO econtrol and BM384 Li-Ion battery system.

3. Equipment

1	Motor EMRAX 208 HV
1	DCU Display and Control Unit
1	RFU Retraction and Fuses Unit
1	Controller SOLO econtrol
1 or 2	Battery BM384
1	PRS Power Rail Supply DC/DC Converter
1	IMD Isolation monitoring device

4. Dimensions

Motor:	Diameter 208 mm, Width 85 mm
DCU:	63 mm x 63 mm x 43 mm (Panel Cut-out 59 mm x 59 mm)
RFU:	130 mm x 80 mm x 31 mm
Controller:	280 mm x 200 mm x 90 mm
Battery:	725 mm x 347 mm x 82 mm
PRS:	120 mm x 83 mm x 55 mm
IMD:	140 mm x 112 mm x 43 mm

Overall dimensions depend on individual airframe installation.

5. Dry Weight

Motor:	9,1 kg
DCU:	145 g
RFU:	260 g
Controller:	3,4 kg
Battery:	25 kg
PRS:	400 g
IMD:	220 g

Overall weight:

With one battery:	38,5 kg
With two batteries:	63,5 kg

6. Ratings

With one battery:

Max. Takeoff Power MTOP: 20 kW at 4300 rpm

Max. Continuous Power MCP: 14 kW at 3000 rpm

With two batteries:
Max. Takeoff Power MTOP: 35 kW at 4000 rpm
Max. Continuous Power MCP: 23 kW at 3500 rpm

7. Control System
Motor controlled by single power lever via SOLO econtrol controller, DCU display control unit.

8. Fluids (Fuel, Oil, Coolant, Additives)
None.

9. Aircraft Accessory Drives
None.

IV. Operating Limitations

1. Temperature Limits
Maximum motor temperature: 120°C
Maximum controller temperature: 85°C
Maximum battery temperature: 70°C

2. Speed Limits
Maximum motor speed: 4350 rpm
Maximum continuous motor speed: 3600 rpm

3. Current Limits
Maximum battery current: 80 A
Maximum continuous battery current: 60 A

4. Voltage Limits
Minimum battery voltage: 240 V
Maximum battery voltage: 403 V

5. Battery Limits

Battery capacity:	11,2 Ah
Non-usable battery capacity:	1.0 Ah (~10%)
Max battery discharge temperature:	70°C
Min battery discharge temperature:	-20°C
Max battery charge temperature:	50°C
Min battery charge temperature:	0°C
Range of permissible cell voltage:	2,5 - 4,2 V

V. Operating and Service Instructions

1. Manual for the electric propulsion system SOLO Type 80400, Edition May 18th 2022

VI. Notes

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SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

Not applicable

II. Type Certificate Holder Record

Not applicable

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	12 June 2023	Initial Issue	Initial Issue, 12 June 2023

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