Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.E.00097

for

SOLO 8000 Series Engines

Type Certificate Holder:
SOLO Kleinmotoren GmbH
Industriestrasse 9
71069 Sindelfingen
Germany

Model(s):	SOLO 8000/400 SOLO 8000/401
Issue:	2
Date of issue:	14 November 2025

TABLE OF CONTENTS

Section 1 SOLO 8000/400

I. General

1. Type / Variant / Model

a) Type: SOLO 8000
b) Variant or Model: SOLO 8000/400

2. Type Certificate Holder

SOLO Kleinmotoren GmbH

Industriestrasse 9

71069 Sindelfingen

Germany

3. Manufacturer

SOLO Aircraft Engines GmbH

Industriestrasse 9

71069 Sindelfingen

Germany

4. State of Design Type Certification Application Date

25/02/2019

5. State of Design Type Certification Date

12/06/2019

6. UK CAA Type Validation Date

10/01/2024

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

25.02.2019

2. Airworthiness Requirements

CS-22 Amdt. 3, Subpart H

3. Special Conditions

SC-22.2014-01 Issue 2 - Installation of Electric Propulsion Units in Powered Sailplanes

4. Exemptions

None

5. Deviations

None

6. Equivalent Safety Findings

None

7. Requirements Elected to Comply

None

8. Environmental Standards

Not applicable

III. Technical Characteristic and Operating Limitations

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
SOLO eControl:	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
SOLO eControl:	3.4 kg

Battery:	25kg
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.

10. Temperature Limits

Maximum motor temperature:	120°C
Maximum controller temperature:	85°C
Maximum battery temperature:	70°C

11. Speed Limits

Maximum motor speed:	4350 rpm
Maximum continuous motor speed:	3600 rpm

12. Current Limits

Maximum battery current:	80 A
Maximum continuous battery current:	60 A

13. Voltage Limits

Minimum battery voltage:	240 V
Maximum battery voltage:	403 V

14. Battery Limits

Battery capacity:	11.2 Ah
Non-useable 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

IV. Operating and Service Instructions

1. Operating Manual and Maintenance Manual for Engine

Manual for the electric propulstion system SOLO Type 80400, Revision 1, Dated 18th May 2022, or later approved revision.

V. Operational Suitability Data

None

VI. Notes

None

Section 2 SOLO 8000/401

I. General

1. Type / Variant / Model

c) Type: SOLO 8000
d) Variant or Model: SOLO 8000/401

2. Type Certificate Holder

SOLO Kleinmotoren GmbH

Industriestrasse 9

71069 Sindelfingen

Germany

Design Organisation Approval ADOAP: AP.136

3. Manufacturer

SOLO Aircraft Engines GmbH

Industriestrasse 9

71069 Sindelfingen

Germany

Production Organisation Approval DE.21G.0032

Previous Manufacturers: SOLO Vertriebs- und Entwicklungs-GmbH (before June 2nd 2025)

4. State of Design Type Certification Application Date

25/02/2019

5. State of Design Type Certification Date

12/06/2019

6. UK CAA Type Validation Date

10/01/2024

II. Certification Basis

1. Reference Date for determining the applicable airworthiness requirements

25.02.2019

2. Airworthiness Requirements

CS-22 Amdt. 3, Subpart H

3. Special Conditions

SC-22.2014-01 Issue 2 - Installation of Electric Propulsion Units in Powered Sailplanes

4. Exemptions

None

5. Deviations

None

6. Equivalent Safety Findings

None

7. Requirements Elected to Comply

None

8. Environmental Standards

Not applicable

III. Technical Characteristic and Operating Limitations

1. Type Design Definition

SOLO 8000/401: Master document list SOLO 80401, issue May 27th 2025

2. Description

Electric propulsion system for powered sailplanes consisting of air-cooled axial-flux synchronous permanent magnet electric motor EMRAX 228 HV, controller SOLO econtrol and BM384 Li-Ion battery system.

3. Equipment

1	Motor EMRAX 228 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	SOLO eFlightBox Unit

4. Dimensions

Motor:	Diameter 228 mm, Width 86 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
SOLO eControl:	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
SOLO eFlightBox:	195 mm x 112 mm x 55 mm

Overall dimensions depend on individual airframe installation.

5. Dry Weight

Motor:	12.0 kg
DCU:	145 g
RFU:	260 g

SOLO eControl:	3.5 kg
Battery:	25kg
PRS:	400 g
SOLO eFlightBox Unit:	600 g

Overall weight:

With one battery:	41.9 kg
With two batteries:	66.9 kg

6. Ratings

With one battery:

Max. Takeoff power MTOP:	20 kW at 3200 rpm
Max. Continuous Power MCP:	14 kW at 3200 rpm

With two batteries:

Max. Takeoff Power MTOP:	35 kW at 3200 rpm
Max. Continuous Power MCP:	23 kW at 3200 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.

10. Temperature Limits

Maximum motor temperature:	120°C
Maximum controller temperature:	85°C
Maximum battery temperature:	70°C

11. Speed Limits

Maximum motor speed:	3500 rpm
Maximum continuous motor speed:	3200 rpm

12. Current Limits

Maximum battery current:	80 A
Maximum continuous battery current:	60 A

13. Voltage Limits

Minimum battery voltage:	240 V
Maximum battery voltage:	403 V

14. Battery Limits

Battery capacity:	11.2 Ah
Non-useable 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

IV. Operating and Service Instructions

1. Operating Manual and Maintenance Manual for Engine

SOLO 8000/401: Manual for the electric propulsion system SOLO Type 80401, Edition Feb 17th 2025 or later approved revisions.

V. Operational Suitability Data

None

VI. Notes

None

Section 3 Administration

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
A	Ampere
Ah	Ampere-hour
CAA	Civil Aviation Authority
DCU	Display and Control Unit
EASA	European Union Aviation Safety Agency
g	Gram
IMD	Isolation Monitoring Device
kg	Kilogram
kW	Kilowatt
PRS	Power Rail Supply
RFU	Retraction and Fuses Unit
Rpm	Revolutions per minute
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCH	Type Certificate Holder
V	Volt

II. Type Certificate Holder Record

TCH Record	Period
SOLO Kleinmotoren GmbH Industriestrasse 9 71069 Sindelfingen Germany	Present. No changes.

III. Amendment Record

TCDS Issue No.	TCDS Issue Date	Changes	TC Issue and Date
1	10 Jan 2024	Initial TC Issue – validation of EASA.E.237 – Type certification of SOLO 8000/400.	Issue 1 10 Jan 2024
2	14 Nov 2025	Addition of SOLO 8000/401 Model.	Issue 2 14 Nov 2025

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