TYPE-CERTIFICATE DATA SHEET

No. EASA.E.234

For type
E-811
Engine

Type Certificate Holder
Pipistrel Vertical Solutions d.o.o.

Vipavska cesta 2
5270 Ajdovščina
Slovenia

For Model:

268MVLC

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I. General

1. Type / Models

Type: E-811
Model: 268MVLC

2. Type Certificate Holder

Pipistrel Vertical Solutions d.o.o.

Vipavska cesta 2
5270 Ajdovščina
Slovenia

Design Organisation Approval No.: EASA.21J.524

3. Manufacturer

Pipistrel d.o.o.

Goriška cesta 50a
5270 Ajdovščina
Slovenia

Production Organisation Approval No.: SI.21G.0002

4. Date of Application

28 December 2017

5. EASA Type Certification Date

18 May 2020

II. Certification Basis

1. State of Design Authority Certification Basis

N/A

2. Reference Date for determining the applicable airworthiness requirements

28 December 2017

3. EASA Certification Basis

3.1. Airworthiness Standards
CS-22, Subpart H, Amendment 2

3.2. Special Conditions (SC)
SC E-1 - Electrical Engine for powered sailplanes, LSA or VLA

3.3. Equivalent Safety Findings (ESF)
None

3.4. Deviations
None

3.5. Environmental Protection
Not applicable for electrical engine

III. Technical Characteristics

1. Type Design Definition
Master Drawing List no. DWG- 811-02-40-001

2. Description
The engine is an electric motor associated to its controller (*a power electronics unit*). E-811-268MVLC engine combines a 268 MV LC VHML motor and a dedicated H300C power-electronics. System contains coolant input, communication bus connection, 12V power supply and high voltage bus located on power-electronics and coolant output located on the motor. 268 MV LC VHML motor is an axial flux synchronous permanent magnet electric motor.

3. Equipment
Power controller is H300C power-electronics

4. Dimensions
The motor has a diameter of 268 mm and is 91 mm width.
The power controller dimensions are 245×126×230 mm.
Overall dimension depends on installation. Motor and power controller can be installed independently.

5. Dry Weight
Motor weight: 22.7 kg
Power controller weight: 7 kg

6. Ratings
Maximum Take-off Power MTOP: 57.6 kW at 2500 rpm and under 400Vdc, limited to 90 seconds
Maximum Continuous Power MCP: 49.2 kW at 2350rpm and under 400Vdc

7. Control System
Power controller is H300C power-electronics.
Controller version is identified in the Master Drawing List DWG-811-02-40-001.

8. Fluids (Oil, Coolant, Additives)
Coolant liquid is not part of the engine type design. However, it is requested to use a coolant liquid composed of 50% water + 50% glycol automotive grade G12+ .

9. Aircraft Accessory Drives
None

10. Propeller installation
The engine E811-268MVLC was initially certified with a 3 blade fixed pitch propeller certified with the Pipistrel Velis aircraft. The list of approved propellers as well as the allowed characteristics are published in the document EIM-811-00-60-7201 Engine installation and maintenance manual.

IV. Operating Limitations

1. Motor operating temperature Limits
Minimum outside air temperature for operation: -20°C
Maximum outside air temperature for operation: 40°C

2. Motor temperature Limits
Maximum Motor temperature at MCP and MTOP: 110 °C
Maximum Controller temperature at MCP and MTOP: 70 °C

3. Speed Limits
Maximum Motor speed at MCP: 2350 rpm
Maximum Motor speed at MTOP: 2500 rpm

4. Torque Limits
Maximum torque at MCP: 200 Nm
Maximum torque at MTOP: 220 Nm

5. Pressure Limits
Not applicable

6. Current Limits
Maximum controller current: 311A (220 Arms)
Maximum continuous current: 226A (160 Arms)

7. Voltage Limits
Maximum input Voltage: 400 Vdc
Minimum input Voltage: 250 Vdc

8. Cooling limits
Maximum allowed coolant temperature (at controller inlet) is 60°C.
Minimum required coolant flow is 5.5l/min.

9. Time Limited Dispatch (TLD)

The engine is not approved for Time Limited Dispatch. All engine systems and equipment must be functional prior to aircraft take-off. Any detected engine system or equipment failure must be corrected before next flight. For special instructions see the EIM- 811-00-60-7202 Engine Operator`s Manual.

10. ETOPS Capability

Not applicable

V. Operating and Service Instructions

1. Instructions for Continued Airworthiness

The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable document "EIM-811-00-60-7201 Engine Installation and Maintenance Manual", chapter 4 "Maintenance".

2. Operating instructions

The operating instructions are provided in the Engine Operator's Manual EIM-811-00-60-7202.

3. Maintenance instructions

The maintenance instructions are provided in the applicable document "EIM-811-00-60-7201 Engine Installation and Maintenance Manual".

VI. Notes

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SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

Acronym	Definition
MCP	Maximum Continuous Power
MTOP	Maximum Take-Off Power (limited to 90s)

II. Type Certificate Holder Record

Pipistrel Vertical Solutions d.o.o.

Vipavska cesta 2
5270 Ajdovščina
Slovenia

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	18 May 2020	Initial Issue	Initial Issue, 18 May 2020

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