

Approved Models List For
EXT680-24-TSO Battery Installation
EarthX

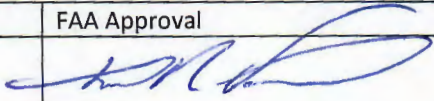
STC No. SA01134DE

Revision: IR

Dated: 7/31/2024

**FAA APPROVED MODEL LIST
EXT680-24-TSO Battery Installation
EarthX STC No. SA01134DE**

1 Revision Log

Revision	Pages	Description	FAA Approval	Date
IR	ALL	Initial Release	 Kreg R. Voorhies, ODA Lead administrator Cert Works, LLC ODA ODA No. ODA(AIR)-833887-NM	JUL 31 2024

2 Introduction

This document is the Federal Aviation Administration (FAA) Approved Model List (AML) for Supplemental Type Certificate (STC) Number SA01134DE, for installing the EarthX Inc. ETX680-24-TSO Battery into eligible aircraft.

Revisions to the AML must be coordinated between the STC holder and the responsible Certification Branch and require FAA approval. This AML is only applicable to the aircraft listed in paragraph 4.

2.1 Prerequisites

For a serial number of an approved model (see paragraph 4) to be eligible for this STC installation, certain equipment must be installed (See paragraph 2.2, limitation 1)

2.2 Limitations

2.2.1 Limitations – All models:

Limitation Number	Limitations for ALL models
1	To prevent battery overcharging, Over Voltage Protection (OVP) means/ equipment in the battery charging system is required.
2	The installer must determine if this design change is compatible with previously approved modifications.
3	The modified airplane must be maintained in accordance with the Instructions for Continued Airworthiness (ICA) document.
4	A copy of this certificate must be maintained as part of the permanent records for the modified aircraft.
5	If the holder agrees to permit another person to use this certificate, the holder shall give the other person written evidence of that permission.
6	Installation limited to 28 DC volts electrical systems.

2.2.2 Limitations – Model Specific:

None

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3 Certification Basis

The certification basis for each qualified model listed in paragraph 4 is as specified in its Type Certificate Datasheet (TCDS) and as modified by this STC’s type design at the amendment levels noted in below:

3.1 All Models (Rows 1-4)

Based on §§ 21.115 and 21.101, and the FAA policy for significant changes in FAA Order 8110.48, the certification basis is as follows:

a. As determined by the Type Certificate Data Sheet (TCDS) for the aircraft for parts not changed or not affected by this STC.

b. Regulations at the amendment levels listed in Table 1 below for parts changed or affected by the STC since the reference date of application, February 14, 2022.

14 CFR Sections: 23.301(a),(b),(c) Amdt. 23-48; 23.303 Amdt. - ; 23.305(a),(b) Amdt. 23-45; 23.307(a) Amdt. - ; 23.337(a)(1)(2),(b)(1) Amdt. 23-48; 23.601 Amdt. - ; 23.603 Amdt. 23-23; 23.605(a) Amdt. 23-23; 23.607(b) Amdt. 23-48; 23.609 Amdt. - ; 23.611 Amdt. 23-48; 23.613 Amdt. 23-45; 23.619 Amdt. 23-7; 23.625(a),(b),(c) Amdt. 23-7; 23.771(a) Amdt. 23-14; 23.773(a)(1,2) Amdt. 23-63; 23.853(a) Amdt. 23-62; 23.863 Amdt. 23-34; 23.867 Amdt. 23-49; 23.1183(a) Amdt. 23-51; 23.1301 Amdt. 23-62; 23.1309(a),(d) Amdt. 23-62; 23.1322 Amdt. 23-43; 23.1351(a)(1)(2)(i),(b)(1)(i)(ii)(iii),(2),(3) Amdt. 23-49; 23.1357(a,b) Amdt. 23-43; 23.1359(a),(c) Amdt. 23-49; 23.1365(a,d,e) Amdt. 23-49; 23.1367 Amdt. - ; 23.1431(b) Amdt. 23-62; 23.1529 Amdt. 23-26; 23.1541(a)(2)(b) Amdt. 23-21; 23.1581(a-c)(f) Amdt. 23-50; 23.1585(a,j) Amdt. 23-50; 23.2005 Amdt. 23-64; 23.2010 Amdt. 23-64; 23.2325(g) Amdt. 23-64; 23.2410 Amdt. 23-64; 23.2440(c)(1) Amdt. 23-64; 23.2500 Amdt. 23-64; 23.2505 Amdt. 23-64; 23.2510 Amdt. 23-64; 23.2520 Amdt. 23-64; 23.2525(a),(b),(c) Amdt. 23-64.

c. Means of Compliance Issue Paper, S-1, dated 4/17/2023 approved and closed on 4/28/2023, Installation of Rechargeable Lithium Battery Systems for 14 CFR Part 23 Airplanes is applicable to this modification.

SO No	Safety Objectives
1	Be designed to maintain safe cell temperatures and pressures under all foreseeable operating conditions to prevent fire and explosion.
2	Be designed to prevent the occurrence of self-sustaining, uncontrollable increases in temperature or pressure, and automatically control the charge rate of each cell to protect against adverse operating conditions, such as cell imbalance, back charging, overcharging, and overheating.
3	Not emit explosive or toxic gases, either in normal operation or as a result of its failure, that may accumulate in hazardous quantities within the airplane
4	Meet the requirements of §23.2325(g).
5	Not damage surrounding structure or adjacent systems, equipment, components, or electrical wiring from corrosive or any other fluids or gases that may escape in such a way as to cause a major or more-severe failure condition.
6	Have provisions to prevent any hazardous effect on airplane structure or systems caused by the maximum amount of heat it can generate due to any failure of it or its individual cells.
7	Have a failure sensing and warning system to alert the flight crew if its failure affects safe operation of the airplane.
8	Have a monitoring and warning feature that alerts the flight crew when its charge state falls below acceptable levels if its function is required for safe operation of the airplane.
9	Have a means to disconnect from its charging source in the event of an over-temperature condition, cell failure or battery failure.

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4 Approved Model List

Item	Aircraft Make	Model / Series	TCDS No.	Cert Basis / Amdt ¹	Installation Data/ Master Drawing List ²	FMS ²	ICA ³	Notes	Initial Approval/ Amendment Date
1	Textron (Cessna)	172N	3A12	CAR Part 3, Amdts 3-1 through 3-12	D23120, Master Drawing List (MDL), Rev IR dated 5/16/2024	ETX680-24-TSO-AFMS, FAA Approved Airplane Flight Manual Supplement (AFMS) For EarthX ETX680-24-TSO Battery, Rev. IR dated 9/11/2023	200408, Instructions for Continued Airworthiness (ICA), ETX680-24-TSO Battery, Rev. B dated 5/1/2024	Eligible Serial Numbers for 172N/172P/172Q:	7/31/2024
2		172P						S/N 17258105 through 17258112,	7/31/2024
3		172Q						17261578 and 17269310 through 17276654	7/31/2024
4		172R		All serial numbers.				7/31/2024	
5		172S		All serial numbers.				7/31/2024	
				14 CFR Part 23, Amdts 23-1 through 23-6					

¹ See TCDS for additional Certification Basis Information

² Or later FAA approved revision.

³ Or later FAA accepted revision.

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