



TYPE-CERTIFICATE DATA SHEET

NO. EASA.A.620

for
EXTRA NG

Type Certificate Holder
Extra Aerobatic Aircraft GmbH

Kirchstr. 158
46514 Schermbeck
Germany

For models: EXTRA NG



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SECTION A: EXTRA NG

A.I. General

1. Type/ Model/ Variant	
1.1 Type	EXTRA NG
1.2 Model	EXTRA NG
1.3 Commercial Designation	EXTRA NG
1.4 Variant	-/-
2. Airworthiness Category	CS-23, Normal, Aerobatic
3.a Type Certificate Holder	Extra Aerobatic Aircraft GmbH Kirchstr. 158 46514 Schermbeck Germany
3.b Manufacturer	Extra Flugzeugproduktions- und Vertriebs GmbH Schwarze Heide 21 46569 Hünxe Germany
4. EASA Type Certification Application Date	12 December 2014
5. State of Design Authority	EASA
6. State of Design Authority Type Certificate Date	N/A
7. EASA Type Certification Date	11 October 2019

A.II. EASA Certification Basis

1. Reference Date for determining the applicable requirements	11 October 2016
2. Airworthiness Requirements	CS-23 incl. Amdt 4, effective July 17th, 2015
3. Special Conditions	SC-E23.0863-01 issue 2 - Smoke System (when equipped with option „Smoke System“ EASA approval no.10075041)
4. Exemptions	None
5. (Reserved) Deviations	None
6. Equivalent Safety Findings	ELOS-B23-0207-01, Stall Warning removal ELOS-D23-0785d-01, Double action seat belt system ELOS-CS23 777/781, Position and shape of Engine Controls
7. Environmental Protection	EASA CS-36 incl. Amdt. 4, effective 12 January 2016, with reference to ICAO Annex 16, Vol. I, 8th Edition, July 2017



A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition	EX-01102.01 EXTRA NG Type Specification (latest issue).
2. Description	Tandem two-seat, high-performance (unlimited) aerobatic airplane in carbon fibre composite construction, single reciprocating engine & tractor propeller, low wing cantilever monoplane with fixed main gear in tail-wheel configuration.
3. Equipment	EX-01102.03 EXTRA NG Equipment List
4. Dimensions	Span: 8.3 m / 27.23 ft Length: 7.1 m / 23.33 ft Height: 2.52 m / 8.27 ft Wing area: 10.94 m ² / 117.76 ft ²
5. Engine	
5.1. Model	Textron-Lycoming AEIO-580-B1A
5.2 Type Certificate	EASA IM.E.027
5.3 Limitations	Rated power at 2700 RPM: 235 kW/ 315 HP Rated power at 2600 RPM: 228 kW/ 306 HP Maximum RPM (Take-off and max. continuous): With propeller model 1: Normal & Aerobatic Category: 2 600 RPM Aerobatic Category only: 2 700 RPM With propeller model 2: 2 700 RPM Maximum engine oil temperature: 118.3°C / 245°F Oil Pressure ranges: Minimum at idle speed: 172 kPa / 25 psig Normal operating: 379 - 655 kPa / 55 - 95 psig During start and take-off: 793 kPa / 115 psig Fuel Pressure ranges: Max. inlet to injector: 448.2 kPa / 65 psig Min. at inlet to injector: 200 kPa / 29 psig Min. at idle at inlet to injector: 87.2 kPa / 12 psig Max. cylinder head temp. (CHT): 240.6 °C / 465 °F
6. Load factors	Normal Category: +6 g / -3 g at MTOW 950 kg Aerobatic Category: ACROI (single seat ops): ±10 g at MTOW 820 kg ACRO II (double seat ops): ±8 g at MTOW 900 kg ACRO III (double seat ops): ±6 g at MTOW 950 kg



7. Propeller

7.1.1 Model 1	MT-Propeller MTV-9-B-C/C198-25
7.1.2 Type Certificate	EASA.P.096
7.1.3 Number of blades	3
7.1.4 Diameter	1 980 mm / 77.95"
7.1.5 Sense of Rotation	Right-hand tractor (viewed in direction of flight)
7.2.1 Model 2	MT-Propeller MTV-14-B-C/C190-130
7.2.2 Type Certificate	EASA.P.017
7.2.3 Number of blades	4
7.2.4 Diameter	1 900 mm / 74.80"
7.2.5 Sense of Rotation	Right-hand tractor (viewed in direction of flight)

8. Fluids

8.1 Fuel	See POH/AFM
8.2 Oil	See POH/AFM
8.3 Coolant	N/A
8.4 Smoke Oil	See POH/AFM

9. Fluid capacities

9.1 Fuel	Total capacity:	196 l / 51.8 US gal.
	Usable capacity:	193 l / 51.0 US gal.
	Usable capacity for aerobatics:	73 l / 19.3 US gal.
9.2 Oil	Minimum sump capacity:	8.5 l / 9 qts
	Maximum sump capacity:	15.1 l / 16 qts
9.3 Coolant system capacity	N/A	
9.4 Smoke Oil	Total capacity:	36.5 l / 9.6 US gal.

10. Air Speeds

V_O Operating Manoeuvring Speed:	
Normal Category:	144 kIAS / 141 kCAS
Aerobatic Category:	161 kIAS / 158 kCAS
V_{NO} Max. Structural Cruising Speed:	
Normal Category:	144 kIAS / 141 kCAS
Aerobatic Category:	161 kIAS / 158 kCAS
V_{NE} Never Exceed Speed:	221 kIAS / 220 kCAS

11. Flight Envelope

Max. operating altitude above MSL: 3 048 m / 10 000 ft

12. Approved Operations Capability

Day-VFR

13. Maximum Masses

Maximum take-off weight MTOW:	
Normal & ACRO III Category:	950 kg / 2 095 lbs
ACRO II Category:	900 kg / 1 984 lbs
ACRO I Category:	820 kg / 1 808 lbs
Maximum landing weight MLW:	902 kg / 1 989 lbs

14. Centre of Gravity Range

Forward limit:	636 mm / 25.0" / 21.2% MAC
Rear limit:	805 mm / 31.7" / 33.2% MAC

15. Datum

Firewall



16. Control surface deflections	Aileron:	$\pm 30^\circ$
	Elevator:	$\pm 25^\circ$
	Rudder:	$\pm 30^\circ$
	Elevator trim tab:	$\pm 35^\circ$
17. Levelling Means	Canopy frame	
18. Minimum Flight Crew	1 Pilot (rear seat)	
19. Maximum Passenger Seating Capacity	1 (front seat)	
20. Baggage/Cargo Compartments	Max. mass in baggage compartment:	20 kg / 44 lbs
	The baggage compartment must be empty for aerobatics. See POH/AFM for further information.	
21. Wheels and Tyres	Main Wheel Tyre Size:	5.00-5, min. 6-ply
	Tail Wheel Tyre Size:	Solid rubber 125/50-75 ZL
22. (Reserved)		



A.IV. Operating and Service Instructions

1. Flight Manual	Pilot's Operating Handbook (POH) and Airplane Flight Manual (AFM) EX-01701.00 (and approved supplements)
2. Maintenance Manual	Airplane Maintenance Manual (AMM) EX-01702.00 (and approved supplements)
3. Structural Repair Manual	Section 51 of the AMM
4. Weight and Balance Manual	Section 6 of POH / AFM
5. Illustrated Parts Catalogue	N/A



A.V. Notes

- 1.) Lifetime limited to 1500 hours until the completion of the Fatigue testing.
- 2.) A standard Certificate of Airworthiness can only be issued for an aircraft which is equipped with:
 - The 4-blade propeller MTV-14-B-C/C190-130 in combination with the exhaust silencer system type Gomolzig EA300-606000.
 - The 3-blade propeller MTV-9-B-C/C198-25 in combination with the exhaust silencer system type Gomolzig EA300-606000 and reduced maximum take-off engine rotational speed of 2 600 RPM.

Otherwise a Certificate of Airworthiness can only be issued for aerial work.

- 3.) For more certified optional equipment refer to approved AFM/POH Supplements latest revision.
- 4.) Structure is qualified up to 72°C (161.6°F). Structure temperatures (composite) above 72°C (161.6°F) are not permitted. Not to exceed this temperature limit, colour specification for composite structure of the manufacturer (document EA-03205.19) has to be complied with.



SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations

°C	Degrees Celsius / Centigrade
°F	Degrees Fahrenheit
AFM	Airplane Flight Manual
Amdt.	Amendment
AMM	Airplane Maintenance Manual
CHT	Cylinder Head Temperature
CRI	Certification Review Item
CS	Certification Specifications
EASA	European Union Aviation Safety Agency
ESF	Equivalent Safety Finding
ft	Feet; 1 foot = 0.3048 m
ft ²	Square feet; 1 ft ² = 0.093 m ²
g	Acceleration (9.81 m/s ²)
HP	Horsepower; 1 HP = 0.7355 kW
ICAO	International Civil Aviation Organization
in. or "	Inch; 1" = 25.4 mm
kCAS	Knots Calibrated Airspeed
kg	Kilogrammes
kiAS	Knots Indicated Airspeed
kPa	Kilopascal; 1 kPa = 0.145 psig
kW	Kilowatt; 1 kW = 1.3596 HP
l	Liter
lb	Pound; 1 Pound = 0.4536 kg
m	Meter; 1 m = 3.2808 ft
m ²	Square meter; 1 m ² = 10.764 ft ²
MAC	Mean Aerodynamic Chord
max.	Maximum
min.	Minimum
MLW	Maximum Landing Weight
mm	Millimeters
MSL	Mean Sea Level
MTOW	Maximum Take-Off Weight
N/A	Not Applicable
POH	Pilot's Operating Handbook
psig	Pounds per square inch gauge; 1 psig = 6.895 kPa
qts	quarts = ¼ gallon = 0.95 litre



RPM	Revolutions per minute
US gal.	US Gallon (3.785 liters)
VFR	Visual flight rules
V _{NE}	Never exceed speed
V _{NO}	Maximum structural cruising speed
V _O	Maximum operating manoeuvring speed

II. Type Certificate Holder Record

EXTRA Aerobatic Aircraft GmbH
Kirchstr. 158
46514 Schermbeck

III. Change Record

Issue	Date	Changes	TC Issue No. & Date
Issue 01	11 Oct. 2019	Initial Issue	Initial Issue, 11 Oct. 2019
Issue 02	06 Jan. 2020	Manufacturer (see 3.b); editorial changes	Initial Issue, 11 Oct. 2019
Issue 03	08 June 2020	Noise Certification 3-blade propeller MTV-9-B-C/C198-25	Initial Issue, 11 Oct. 2019
Issue 04	02 Dec. 2020	Addition of data for "smoke system" option and baggage compartment	Initial Issue, 11 Oct. 2019

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