TYPE CERTIFICATE DATA SHEET Nº ER-2016T04

Type Certificate Holder:

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ER-2016T04
Sheet 01

FINMECCANICA

AW-189

20 April 2016

This data sheet, which is part of Type Certificate No. 2016T04, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

I - Model AW-189 (Transport Category A and B Rotorcraft), approved 20 April 2016.

ENGINE

Two (2) General Electric CT7-2E1.
For limitations Ref. to GE Operating Instructions No. GEK112766.

AUXILIAR POWER UNIT (APU)

One (1) Microturbo Model e-APU60 model 342.

FUEL SPECIFICATION

JET A, JET A1, JP5, JP8, JP8+100 (for code no. specification and more details refer to Rotorcraft Flight Manual).

OIL SPECIFICATION

Transmissions	AEROSHELL TURBO OIL 555 (DoD-L-85734). No different specification or brand is allowed.
Engine	Ref. to GE Operating Instructions No. GEK112766.
APU	MIL-PRF-23699, MIL-PRF-7808.
Hydraulics	MIL-PRF-83282, MIL-PRF-5606 (as alternative).
Additives	Kathon FP 1.5, MIL-DTL-27686, MIL-DTL-85470, MIL-I-25017, Biobor JF.
Coolant	R134a.

FLUID CAPACITIES

FUEL	Total A/C Capacity litres (Kg (*))	Unusable litres (Kg (*))
Two main fuel tanks (LH and RH)	1303 (1042)	24 (19)
Two main fuel tanks (LH and RH) plus Forward Tanks	1541 (1233)	28 (22)
Two main fuel tanks (LH and RH) plus Auxiliary Central Tank	1825 (1460)	30 (24)
Two main fuel tanks (LH and RH) plus Forward Tanks plus Auxiliary Central Tank	2063 (1650)	34 (27)

(*) Considering a medium density between different fuel of 0.8 Kg/l.

FLUID CAPACITIES (CONT.)

OIL	Quantity litres (Kg)
ENGINE (each)	min 3.6 (3.59) – max 5.5 (5.49)
MAIN GEARBOX (min/max)	min 21.5 (21.46) – max 27 (26.95) (24.5+2.5 for oil cooler, oil ducts and filter)
INTERMEDIATE GEARBOX	1.22 (1.217)
TAIL GEARBOX	1.87 (1.866)
HYDRAULIC (per each Power Control Module)	3.20 (2.72)

COOLANT SYSTEM CAPACITY	2,9 Kg

INSTALLED ENGINE LIMITS

Rating		MAX ITT [°C]	MAX NG [% – RPM]	MAX NF [% – RPM]
AEO	Maximum Continuous	942	102.7 – 42843	104 – 20192
	Take-off 5 min	968	102.7 – 42843	
OEI	Continuous	968	102.7 – 42843	104 – 20192
	2,5 min	1078	105 – 41905	

TRANSMISSION TORQUE LIMITS

Rating		MAX TORQUE [%]	INPUT SPEED [RPM]
AEO	Maximum Continuous	2 X 100	21420
	30 min	2 X 116(*)	21420
OEI	Continuous	1 X 135	21420
	2,5 min	1 X 164 (**)	21420

(*) For airspeeds less than 90 KIAS. For airspeeds greater than 90 KIAS refer to RFM.
(**)Between 155% and 164% is allowed for 30 sec and once per 2.5 min event.

ROTOR LIMITS

Power ON – AEO		
Condition	**(RPM)**	**(%)**
Minimum Continuous	284.75	100.0
Maximum Continuous	296.14	104.0
Power ON – OEI		
Condition	**(RPM)**	**(%)**
Minimum Cautionary	256.28	90.0
Minimum Continuous	284.75	100.0
Maximum Continuous	296.14	104.0
Power OFF		
Condition	**(RPM)**	**(%)**
Minimum Continuous	256.28	95.0
Maximum Continuous	313.23	110.0

AIRSPEED LIMITS

VNE($_{\text{Power ON – AEO}}$) 169 KIAS
VNE($_{\text{Power ON – OEI}}$) 139 KIAS
VNE($_{\text{Power OFF}}$) 120 KIAS
For reduction of the VNE with altitude, OAT and weight, see RFM.

CG RANGE

Refer to EASA-Approved Brazilian Rotorcraft Flight Manual (RFM).

MAXIMUM OPERATING ALTITUDE	Maximum operating altitude 10000 ft (pressure/density altitude which occurs first) Maximum Take-off and Landing altitude 8000 ft (pressure/density altitude which occurs first)
MAXIMUM OPERATING TEMPERATURE	-40ºC to +55ºC (ISA+40ºC) -15 ºC to +55ºC (ISA+40ºC) for Cat. A operations. For variation of Temperature limitations with altitude, see the RFM and applicable supplement.
DATUM	Longitudinal Datum (STA 0) is located at 2830 mm forward to the front jack point. Lateral Datum (BL 0) is located at +/- 275 mm inboard of LH/RH front jack points.
LEVELING MEANS	Plumb line from ceiling reference point to index plate on floor of the passenger cabin.
MAXIMUM WEIGHT	Take-off and Landing 8300 Kg. Taxi and Towing 8350 Kg.
MINIMUM CREW	One (1) pilot for VFR / Two (2) pilots for IFR. For Cat. A operations, two (2) pilots are required if take-off and landing is to be carried out from the left seat.
MAXIMUM PASSENGERS	19.
MAXIMUM BAGGAGE	300 Kg located in the Baggage/Cargo compartment.
ROTOR BLADES AND CONTROL MOVEMENT	For rigging information, refer to the AW189 Maintenance Manual.
SERIAL NUMBER ELIGIBLE	To be considered eligible for operation in Brazil, a Certificate of Airworthiness for Export endorsed as noted under "Import Requirements", must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made. The only aircraft eligible for import into Brazil are those aircraft with the configuration defined in AW Report No. 189G0000P008, “AW189 – ANAC Type Design Definition”, Issue A, dated on 17 February 2016, or latest issue.
IMPORT REQUIREMENTS	A Brazilian Certificate of Airworthiness may be issued on the basis of on an EASA Export Certificate on Airworthiness (or a third country Export Certificate on Airworthiness, in case of used aircraft imported from such country), including the following statement: *“The aircraft covered by this certificate has been inspected, tested and found to be in conformity with the Brazilian approved type design as defined by the Brazilian Type Certificate no. 2016T04 and in condition of safe operation”.*

CERTIFICATION BASIS

Brazilian Type Certificate No. 2016T04 issued on 20 April 2016 based on the RBAC 21.29, which establishes as certification basis for the aircraft the following:

Airworthiness Requirements:

RBAC 29 "Requisitos de Aeronavegabilidade: Aeronaves de Asas Rotativas Categoria Transporte", which endorses the 14 CFR Part 29, as amended by 25-1 through 25-51, effective on 31 March 2008. The compliance was verified through equivalency finding to EASA CS 29, Amendment 2, "Certification Specifications for Large Rotorcraft", including EASA issued Special Conditions and Equivalent Levels of Safety, accepted by ANAC, as follow:

EASA Special Conditions:

SC E-07	Extended Take-off Power Duration (EP, 30 min All Engines Operating).
SC E-09	Loss of Oil from Gearboxes Utilising a Pressurised Lubrification System.
SC F-01	HIRF Protection in accordance with JAA Interim Policy INT/POL/27&29/1 issue 3 dated 01-10-2003.
SC J-01	Essential APU Installation in Large Rotorcraft.

EASA Equivalent Levels of Safety:

ESF D-03	Passenger Access to each Emergency Exit.
ESF D-04	Passenger Emergency Exits – other than Side-Of-Fuselage.
ESF D-06	Emergency Exit Signs.
ESF D-07	Ditching Emergency Exits for Passengers.
ESF D-08	Ferry Flight Configuration.
ESF D-10	Main Aisle Width.
ESF F-15	Power Index Indicator (See Note 5).
ESF F-20	Power Index Indicator (See Note 6).
ESF F-16	H-V Envelope and RFM Charts.
ESF G-02	Airspeed Indicators Green Arcs,
ESF F-18	Main Gearbox OEI 30 seconds Counter and Automatic Reduction (See Note 4).

Noise Requirements:

RBAC 36 "Requisitos de Ruido para Aeronave", corresponding to 14 CFR Part 36, as amended by 36-1 through 36-28, effective on 03 February 2006.

Emission Requirements:

RBAC 34 "Requisitos para Drenagem de Combustivel e Emissoes de Escapamento de Avioes com Motores a Turbina", corresponding to 14 CFR Part 34, as amended by 36-1 through 36-4, effective on 22 March 2013.

REQUIRED EQUIPMENT

The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

The installation of the followings is mandatory for Ditching Operations (see RFM Supplement 6):

- Life rafts (life rafts P/N 8G2560F00511 have been approved for use by AW. The use of other life raft installations must be in accordance with CS/FAR/RBAC 29 and must be approved).
- Survival type Emergency Locator Transmitter.
- Life preservers (the following life preservers installations have been approved by AW: 8G2560F00611, 8G2560F00711, 8G2560F00811. Different life preserver installations must be in accordance with CS/FAR/RBAC 29 and must be approved.

Refer to Approved Rotor Flight Manual and related supplements for other approved mandatory and optional equipment.

SERVICE INFORMATION

AW service bulletins, structural repair manuals, vendor manuals, aircraft flight manuals, and overhaul and maintenance manuals, which contain a statement that the document is EASA approved, are accepted by the ANAC and are considered ANAC approved. These approvals pertain to the approved type design only.

FLIGHT MANUAL

EASA approved on behalf of ANAC Rotorcraft Flight Manual 189G0290X002, Issue 1, Revision 0 or later approved revision.

MAINTENANCE MANUAL

Maintenance Planning Information 89-A-AMPI-00-P.
Maintenance Publication 89-A-AMP-00-X.

DATA PERTINENT TO ALL MODELS:

NOTES:

NOTE 1 Weight and balance. A current weight and balance report including a list of the equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each aircraft at the time of original airworthiness certification in accordance with RBAC 29.25, 29.27, and 29.29.

NOTE 2 Markings and placards. All placards required by either the Brazilian AFM, the applicable operating rules, or the certification basis must be installed in appropriate location in the airplane.

NOTE 3 Continuing airworthiness. Information essential to proper maintenance of the aircraft is contained in the Manufacturer's Maintenance Manual provided with each aircraft. Life limited components and associated retirement times are presented in Chapter 4 and must be replaced accordingly.

NOTE 4 Equivalent Safety Finding CRI F-18 is applicable to AW189 aircraft equipped with Core Avionic Phase 2.0 SW release as defined in 189G0000X007.

NOTE 5 Equivalent Safety Finding CRI F-15 is applicable only to AW189 aircraft equipped with Core Avionic Phase 2.0 SW release as defined in 189G0000X007.

NOTE 6 Equivalent Safety Finding CRI F-20 is applicable only to AW189 aircraft equipped with Core Avionic Phase 2.1 SW release as defined in 189G0000X007 and subsequent releases unless differently specified.

MARIO IGAWA

Gerente-Geral de Certificação de Produto Aeronáutico
(MANAGER, AERONAUTICAL PRODUCT CERTIFICATION)