European Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

No. EASA.A.169

for
AIRBUS A400M

Type Certificate Holder:
Airbus Military Sociedad Limitada (AMSL)

Avenida de Aragon 404
28022 MADRID
SPAIN

Airworthiness Category: Large Aeroplanes

For Model: A400M-180

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SECTION 1: A400M-180

I. General

This Data Sheet, which is part of Type Certificate No. EASA.A.169, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the European Aviation Safety Agency.

1. Type / Model / Variant:

A400M-180

2. Performance Class:

A

3. Certifying Authority:

European Aviation Safety Agency (EASA)
Postfach 101253
D-50452 Köln
Deutschland

4. Manufacturer

Airbus Military Sociedad Limitada (AMSL)
Avenida de Aragon 404
28022 MADRID
SPAIN

Since the beginning of the A400M programme AMSL delegated to AIRBUS S.A.S. the A400M development and certification under a Development Management Contract (DMC). Therefore, and in application of Part 21.A.2 provisions, under this DMC agreement AIRBUS S.A.S. EASA approved Design Organisation (EASA.21J.031) undertook on behalf of AMSL the applicable A400M Type Certificate Holder actions and obligations required by Part 21.A.44.
From 31st July 2014 on it is Airbus Defence and Space SA EASA approved Design Organisation (EASA.21J.032) who in application of Part 21.A.2 provisions is undertaking on behalf of AMSL the applicable A400M Type Certificate Holder actions and obligations required by Part 21.A.44. This has been approved by EASA following the successful completion of a DOA significant change process to include the A400M aircraft under the terms of approval of Airbus Defence and Space SA's DOA EASA.21J.032 and after a new Development and Management Contract (DMC) between AMSL and Airbus Defence and Space SA has entered into force.

5. EASA Certification Application Date

April 24th, 2003

6. EASA Type Certification Date

March 13th, 2013

(Restricted Type Certificate granted on April 30th, 2012 is superseded)

SECTION 1: A400M-180 - continued

II. Certification Basis

1. Reference Date for determining the applicable requirements

September 18th, 2007

2. EASA Type Certification Data Sheet No.

TCDS EASA.A.169

(R-TCDS EASA.A.169 issue 2, dated February 5th, 2013 is superseded)

3. EASA Airworthiness Requirements

EASA Certification Specification Definitions – Definitions and Abbreviations (EASA Decision 2003/11/RM).

EASA Certification Specification 25, Amendment 2 – Large Aeroplanes (EASA Decision 2006/05/R), except where identified below.

EASA Certification Specification AWO – All Weather Operations Initial Issue (EASA Decision 2003/06/RM), except where identified below.

4. Special Conditions

SC B-01 Stalling and scheduled operating speeds
SC B-02 Motion and effects of cockpit control
SC B-03 Static directional, lateral and longitudinal stability and low energy awareness
SC B-04 Flight envelope protection
SC B-05 Normal load factor limiting system
SC B-06 Flight deck novel features – Human factors evaluation (INT/POL 25/14)
SC B-12 Automatic take-off compensation

SC C-02 Design dive speed Vd
SC C-03 Limit pilot forces
SC C-10 Design maneuver requirements
SC C-11 Loading conditions for multi-leg landing gear
SC C-12 Landing Gear Lateral Turning Load
SC C-13 Dynamic Braking
SC C-17 Kneeling and Raising System

SC D-01 Electrical Flight control systems - harmonised 25.671/672
SC D-02 Fire protection of thermal and acoustic insulation material
SC D-07 Class E cargo compartment essential systems fire protection

SC E-03 Falling and Blowing Snow (NPA 25E-341)
SC E-04 Fuel Tank Crashworthiness (Interim Policy 25/9)

SC F-01 HIRF Protection (JAA INT/POL 25/2 iss2)
SC F-03 Flight Recorders / Datalink Recording
SC F-51 Fuel Quantity Indicating System
SC F-52 Lithium Battery Installations

SECTION 1: A400M-180 - continued

SC G-01 Ferrying one engine unserviceable

SC H-01 Enhanced Airworthiness Programme for Aeroplane Systems – ICA on EWIS

SC K-04 Primary Head Up Display System

5. Exemptions

N/A

6. Deviations

The following time limited Deviation is part of the Certification Basis:

Temporary Deviation F-55 Powerplant and Fuel System alerts

7. Equivalent Safety Findings

ESF D-04 Fuselage Doors
ESF D-16 Packs Off Operations
ESF D-17 Doors
ESF D-18 Overpressure Relief valves and Outflow valves
ESF D-20 ESF for A400M Cargo Hold
ESF D-21 Forward Ditching Door
ESF D-23 Crew Determination of Quantity of Oxygen in Supply Sources

ESF E-05 Fuel Tank Access Cover
ESF E-09 Propeller speed and pitch controls

ESF F-10 Pneumatic Systems
ESF F-42 External LED Navigation, Anti-collision and Wingtip taxi lights
ESF F-43 Landing Light Switch

ESF K-05 CAT III Operations - Super Fail Passive Anomalies
(applicable to A400M CAT III option)

SECTION 1: A400M-180 - continued

8. Elect to Comply

ESF C-08 Engine failure loads (NPA 25C305)

ESF F-21 New harmonised CS 25.1329 (NPA 25F344)

SC K-03 Structural Limit Loads and Lateral Touchdown Performance (NPA AWO 14)

9. Operational Suitability Data (OSD) certification basis

For Master Minimum Equipment List (MMEL): JAR-MMEL/MEL Amendment 1, Section 1, Subparts A & B.

10. Environmental Protection Standards

Vented fuel:	ICAO Annex 16, Volume II, Second Edition, Amendment 5, Part II, Chapter 2.
Engine emissions:	ICAO Annex 16, Volume II, Second Edition, Amendment 5, Part III, Chapter 3.
Noise:	ICAO Annex 16, Volume I, Fifth Edition, Amendment 9, Chapter 4. (For details of the certification noise levels see TCDSN EASA.A.169)

III. Technical Characteristics and Operational Limitations

1. Type Design Definition

A400M-180: CCM000A0002/C10 issue 7 (A400M EASA Type Design Definition)

2. Description

Four turbo-propeller engines, medium range tactical transport aeroplane, large aeroplane category.

3. Equipment

The equipment required by the applicable requirements shall be installed.

Cabin furnishings, equipment and arrangement shall conform to the following specification:
- CCM252F0003/C11 for Sidewall Troop seats, Loadmaster seats.
- 00M251Y0003/C01 for Galley.

4. Dimensions

Wingspan:	42.357 meters
Overall Length:	45.091 meters
Height Overall:	14.675 meters

SECTION 1: A400M-180 - continued

5. Engines

Four (4) EPI Europrop International GmbH Turbo-Propeller Engines Models:
TP400-D6 (EASA Engine Type Certificate No. E.033)

Engine Limits:

Engine Limits Data Sheet EASA E.033	A400M-180 TP400-D6
Static thrust at sea level: - Normal Take-off (5min) - Uprated Take-off (5 min)	 7971 kW (10690 shp) 8251 kW (11065 shp)

Other engine limitations: See the relevant Engine Type Certificate Data Sheet.

6. Auxiliary Power Unit

One (1) APU, Hamilton Sundstrand APS 3240

Limitations and Operating Procedures - See the appropriate EASA approved Airplane Flight Manual (See TCDS Section **IV** Note 1)

7. Propellers

Four (4) RATIER-FIGEAC Propeller Models:
Two (2) anticlockwise propellers FH385 (fitted on engines 2 and 4), two (2) clockwise propellers FH386 (fitted on engines 1 and 3) (EASA Propeller Type Certificate No. P.012)

Propeller Limits:

Propeller Limits Data Sheet EASA P.012	A400M-180 FH385 / FH386
Static thrust at sea level: - Normal Take-off (5min) - Uprated Take-off (5 min) Rotational speed: - Take-off - Maximum Continuous - Inadvertent Maximum Overspeed	 7971 kW (10690 shp) 8251 kW (11065 shp) 860 rpm 842 rpm 948 rpm

Other propeller limitations: See the relevant Propeller Type Certificate Data Sheet.

SECTION 1: A400M-180 - continued

8. Fluids (Fuel, Oil, Additives, Hydraulics)

Nomenclature	Specification		
KEROSENE	FRANCE	U.S.A.	U.K.
	DCSEA134 (F-35)	ASTM D 1655 (Jet A) (Jet A-1)	DEF STAN 91-91 (F-35)
	DCSEA144 (JP5)	MIL-T-5624 (F-44 or JP5)	DEF STAN 91-86 (JP5)
	DCSEA134 (F-34)	MIL-T-83133 (F-34 or JP8)	DEF STAN 91-87 (F-34)
		MIL-DTL-831336E (JP8+100)	
		MIL-DTL-5624 (F-40 or JP4)	
		ASTM D 6615 (JET B)	

The fuel system has been certified with: JET A, JET A1, JET B, JP4, JP5, JP8, and JP8+100.
Additives: See EPI TP400 Engine Operating Instructions, installation manual. The above-mentioned fuels and additives are also suitable for the APU .
See the appropriate EASA approved Airplane Flight Manual.
(See TCDS Section **IV** Note 1)

Oils
Oils: Refer to the TP400 Engine Operating Instructions for information on approved oil specifications.

Hydraulics
Hydraulic Fluids: Low Density Type IV & V in accordance with NSA 307110.

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9. Fluid Capacities

The maximum usable fuel is limited by the maximum fuel quantity, because the maximum fuel weight depends on the fuel density.

Tanks	**Fuel Quantity**	
1 Center Tank	14 566 l	3 848 US Gal
1 Left Inner Tank	17 143 l	4 529 US Gal
1 Right Inner Tank	17 050 l	4 505 US Gal
2 Feed Tanks (2 and 3)	7 726 l	2 041 US Gal
2 Feed Tanks (1 and 4)	5 782 l	1 528 US Gal
TOTAL	62 267 l	16 415 US Gal

Tanks	**Fuel Density**	
	0.785 kg/l	**6.55 lb/US Gal**
	Fuel Weight	
1 Center Tank	11 434 kg	25 204 lb
1 Left Inner Tank	13 457 kg	29 664 lb
1 Right Inner Tank	13 384 kg	29 507 lb
2 Feed Tanks (2 and 3)	6 064 kg	13 368 lb
2 Feed Tanks (1 and 4)	4 538 kg	10 008 lb
TOTAL	48 879 kg	107 754 lb

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High Fuel Load

To obtain the maximum fuel capacity (High Fuel Load), the ground standing attitude, of the aircraft during refuel operation, must be within +/- 3.5 degrees both in Pitch and Roll.
The maximum usable fuel is limited by the maximum fuel quantity, because the maximum fuel weight depends on the fuel density.

Tanks	**Fuel Quantity**	
1 Center Tank	14 864 l	3 927 US Gal
1 Left Inner Tank	17 373 l	4 590 US Gal
1 Right Inner Tank	17 280 l	4 565 US Gal
2 Feed Tanks (2 and 3)	7 888 l	2 084 US Gal
2 Feed Tanks (1 and 4)	6 096 l	1 611 US Gal
TOTAL	63 501 l	16 777 US Gal

Tanks	**Fuel Density**	
	0.785 kg/l	**6.55 lb/US Gal**
	Fuel Weight	
1 Center Tank	11 668 kg	25 721 lb
1 Left Inner Tank	13 637 kg	30 064 lb
1 Right Inner Tank	13 564 kg	29 900 lb
2 Feed Tanks (2 and 3)	6 192 kg	13 650 lb
2 Feed Tanks (1 and 4)	4 785 kg	10 552 lb
TOTAL	49 848 kg	109 889 lb

See appropriate Weights and Balance Manual
(See TCDS Section **IV** Note 3)

10. Airspeed Limits

Maximum Operating Limit Speed (V_{MO}/M_{MO}):
V_{MO} = 300 Kt IAS
V_{MO} = M 0.72

For other airspeed limits, see the appropriate EASA approved Airplane Flight Manual
(See TCDS Section **IV** Note 1)

11. Flight Envelope

Maximum Operating Altitude: 35,000 feet

See the appropriate EASA approved Airplane Flight Manual
(See TCDS Section **IV** Note 1)

12. Operating Limitations

See the appropriate EASA approved Airplane Flight Manual
(See TCDS Section **IV** Note 1)

SECTION 1: A400M-180 - continued

12.1 Approved Operations

The aeroplane is certified in the cargo transport category, in day and night conditions, when the appropriate equipment and instruments required by the airworthiness and operating regulations are approved, installed and in an operable condition. The aircraft is certified for the following conditions and operations:

- Visual (VFR)
- Instrument (IFR)
- Flight in icing conditions
- The aeroplane is certified for ditching

For a complete list of the approved operations, see the appropriate EASA approved Airplane Flight Manual

12.2 Other Limitations

Runway slope – +/- 2%
Maximum Takeoff and Landing Tailwind Component – 10 knots
Maximum Operating Altitude – 35,000 feet pressure altitude
Maximum Takeoff and Landing Altitude – 8,500 feet pressure altitude

For a complete list of applicable limitations see the appropriate EASA approved Airplane Flight Manual

13. Maximum Certified Masses

Weight Variant : WV 001		
Maximum Taxi Weight (MTW)	137 900 kg	304 017 lb
Maximum Takeoff Weight (MTOW)	137 500 kg	303 135 lb
Maximum Landing Weight (MLW)	121 500 kg (1)	267 861 lb (1)
Maximum Zero Fuel Weight (MZFW)	109 600 kg	241 626 lb
Minimum Weight	90 000 kg (87 000 kg if Mod 84053 is implemented)	198 416 lb (191 803 lb if Mod 84053 implemented)

(1): For landing below 121 500 kg (267 861 lb), the maximum touchdown vertical speed should not exceed 600 ft/min.

Notes: The maximum weight limits may be less as limited by center of gravity, performance requirements as given in the EASA approved Airplane Flight Manual (See TCDS Section **IV** Note 1). Refer to the Weight and Balance Manual (See TCDS Section **IV** Note 3) for additional specific aeroplane loading limitations.

See the appropriate EASA approved Airplane Flight Manual
(See TCDS Section **IV** Note 1)

14. Centre of Gravity Range

See the appropriate EASA approved Airplane Flight Manual
(See TCDS Section **IV** Note 1)

SECTION 1: A400M-180 - continued

15. Datum

Station 0.0, located 4.820 meters forward of aeroplane nose

16. Mean Aerodynamic Chord (MAC)

5.671 meters

17. Levelling Means

The aeroplane can be jacked on three primary jacking points.
See the appropriate EASA approved Weight and Balance Manual
(See TCDS Section **IV** Note 3)

18. Minimum Flight Crew

Two (2): Pilot and co-pilot

19. Maximum Seating Capacity

No other occupants apart of the minimum flight crew are allowed on board

20. Baggage/ Cargo Compartment

No loads shall be carried in the cargo compartment

21. Wheels and Tyres

Nose Assy (Qty 2)
Tyre: 37x14.0-14 22PR
Wheel: C20596000

Main Assy (Qty 12)
Tyre: 43x15.5-17 22PR
Wheel: C20595000

22. ETOPS

N/A

SECTION 1: A400M-180 - continued

IV. Operating and Service Instructions

1. Airplane Flight Manual (AFM)

EASA Approved A400M civil Airplane Flight Manual for A400M-180, that consists of:

- Normal Revision 03 (as per Airbus Compliance Document CCM101A0015/C11 issue 3, June 2013, including AFM Temporary Revision TR63 issue 1.0(June 2013))

Or later EASA AFM approved revision

2. Maintenance Instructions and Airworthiness Limitations

- Limitations applicable to **Safe Life Airworthiness Limitations Items** are provided in the A400M ALS Part 1 Manual, Revision 01 approved by EASA (Compliance Document CMM050ALS01/C01 issue 3, April 2013[1])

- Limitations applicable to **Damage-Tolerant Airworthiness Limitations Items** are provided in the A400M ALS Part 2 DT ALI Manual, Revision 01 approved by EASA (Compliance Document CMM050ALS02/C01, issue 2, April 2013 [1]) completed by the Variation to Revision 01 of A400M ALS Part 2 (Compliance document CCVLG130001/C0S issue 1, April 2013

- **Certification Maintenance Requirements** are provided in the A400M ALS Part 3 CMR Manual, Revision 01 approved by EASA (Compliance Document CMM050ALS03/C01, issue 02, April 2013[1]),

- A400M-180 **System Equipment Maintenance Requirements** are provided in the A400M ALS Part 4 SEMR Manual Revision 00 (Compliance Document CMM050ALS04/C01, issue 1, May 2013 [1]), completed by the Variation to Revision 00 of A400M ALS Part 4 (Compliance Document CCVLG130003/C0S issue 1, June 2013)

- A400M-180 **Fuel Airworthiness Limitations** are provided in the A400M ALS Part 5 FAL Manual, Revision 01 approved by EASA (Compliance Document CMM050ALS05/C01, issue 02, April 2013[1])

- A400M-180 Maintenance Review Board Report (MRBR) revision 1 limited to the Civil Scheduled Maintenance Requirements (CSMR) published and agreed by EASA on August 2012, or later revisions.

- The EWIS ICAs in accordance with Airbus A400M EWIS ICA compliance source document CMM207ACSD0/C11 issue 1, dated January 2013 or later revisions and developed with EZAP are published as part of the MRBR.

Note [1]: Including ALS variations or later EASA approved revision

3. Weight and Balance Manual (WBM)

Airbus Compliance Document CCM080A0001/C0S

SECTION 1: A400M-180 - continued

V. Operational Suitability Data (OSD)

The Operational Suitability Data elements listed below are approved by the European Aviation Safety Agency under the EASA Type Certificate EASA.A.S.169 as per Commission Regulation (EU) 748/2012 as amended by Commission Regulation (EU) No 69/2014.

1. Master Minimum Equipment List (MMEL)

EASA A400M MMEL revision number 5 (doc. Reference M00SP1408651) dated 18th February 2015 or later EASA approved revisions.

VI. Notes

NOTE 1: Aircraft Manufacturer Serial Numbers (MSN) that are eligible to be produced in conformity with EASA A400M Type Design Definition (CCM000A0002/C10 issue 7): NONE

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

A/C	Aircraft
AFM	Airplane Flight Manual
ALS	Airworthiness Limitation Section
AMC	Acceptable Means of Compliance
AMSL	Airbus Military Sociedad Limitada
APU	Auxiliary Power Unit
AWO	All Weather Operations
CG	Center of Gravity
CMR	Certification Maintenance Requirement
CRI	Certification Review Item
CS	Certification Specifications
DOA	Design Organisation Approval
EASA	European Aviation Safety Agency
EIS	Entry Into Service
EPI	Europrop International
ESF	Equivalent Safety Finding
EU	European Union
EWIS	Enhanced Wiring Interconnection System
FAL	Fuel Airworthiness Limitation
FMS	Flight Management System
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
MAC	Mean Aerodynamic Chord
MLW	Maximum Landing Weight
MMEL	Master Minimum Equipment List
MTOW	Maximum Takeoff Weight
MTW	Maximum Taxi Weight
MZFW	Maximum Zero Fuel Weight
N/A	Not Applicable
NPA	Notice of Proposed Amendment
OSD	Operational Suitability Data
RNAV	Radio Navigation
RVSM	Reduced Vertical Separation Minima
SC	Special Condition
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet for Noise
VFR	Visual Flight Rules
WBM	Weight and Balance Manual
WV	Weight Variant

II. Type Certificate Holder Record

Airbus Military Sociedad Limitada (AMSL)
Avenida de Aragon 404
28022 MADRID
SPAIN

SECTION: ADMINISTRATIVE- continued

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	30 April 2012	Initial Issue for Model A400M-180	Initial issue, 30 April 2012
Issue 02	05 Feb 2013	Page 11, Section 1 General, Paragraph III.13. Max. Certified Mass: sentence about minimum flight weight not including usable fuel has been removed. Page 13, Section 1, Paragraph IV.1 Airplane Flight Manual (AFM): additional information regarding status of initial EASA approved AFM revision has been added: issue 2 of Airbus document is including TR 5 for restricted TC content	No change
Issue 03	13 March 2013	Restricted deleted on all pages and cover sheet Page 04: date of issuance of TC and mention to Restricted TC now superseded by TC added Page 05: mention to standard TCDSs whih supersedes restricted TCDSs added Page 07, Section 1, Paragraph III.01. Type Design Definition : Type Def updated to issue 5 Page 11, Section 1, Paragraph III.12.1. Approved Operations : Restricted category removed Page 11, Section 1, Paragraph III.13. Max. Certified Mass: Updated masses to take into account of AFM TR 29 (Weight Limitations) Page 13, Section 1, Paragraph IV.1 Airplane Flight Manual (AFM): updated revision of AFM Page 13, Section 1, Paragraph IV.2. ICA and Airw. Limitations: updated revision of CMR and MRBR	13 March 2013
Issue 04	17th Jul 2013	Pages 05-12-13: word airplane substituted by aeroplane Page 06: Temporary Deviation CRIs removed (except F-55) Page 07: new issue of the Type Design Definition Page 09: updated list of approved fuels Page 10-11: Fluid capacities for Fuel Loading and High fuel load updated Page 12: Maximum Operating Altitude updated Page 12: Approved operations updated Page 12: Other limitations updated Page 12: Maximum certified masses updated Page 14: updated revision of AFM Page 14: updated revision of ALS manuals	No change

Issue 05	31st July 2014	Page 4: EADS-CASA' DOA EASA.21J.032 undertaking TC Holder's Part 21 responsibilities from 31st July 2014 on. Page 12: new aircraft minimum weight is mentioned for Mod 84053 a/c configurations. Page 14: editorial upgrade on existing mention to EWIS ICA's.	No change
Issue 06	17th December 2015	Page 4: The name EASA.21J.032 Part 21 DOA responsible being updated from former EADS-CASA to Airbus Defence and Space SA Page 7 Subparagraph added to define MMEL OSD Certification Basis Page 15 New Section V for Operational Suitability Data Page 15 Previous Section V Notes re-numbered as Section VI Page 17 Acronyms list updated	No change

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