

A300-600 & A310 specifications

The A300-600 & A310 family have a wide range of variants, models and roles. The different types and their specifications are described.

The A310 was Airbus's second product, and featured a shorter fuselage than its predecessor, the A300B2/4. The A310 first entered service in 1982 and was manufactured until 1998. The A300-600 was a direct replacement for the A300B2/4, with the -600 series featuring a small fuselage stretch. The A300-600 entered service in 1984 and was manufactured until 2007.

The A300-600 and A310 were the first two Airbus aircraft to feature commonality, sharing the same electronic flight instrument system (EFIS) flightdeck, the same basic engine models, and many of the same rotatable components. The two aircraft also have medium- to long-haul capability. These features combined with their two sizes meant that they were the first aircraft from Airbus to be marketed under a 'family' concept. The common EFIS flightdeck provides the A300-600 and A310 with a common type rating, which obviates the need for transition training between the two. The A300-600 and A310 were also among the pioneers of extended-range twin-engine operations (Etops).

Two main variants of the A300-600 were built by Airbus: the basic A300-600,

and the extended-range A300-600R. Each is available in all-passenger, passenger/freight convertible and freighter versions. There is also a choice of three main types of powerplant: the JT9D-7R4 series, the PW4000-94 series and the CF6-80C2 series. This results in a total of nine sub-variants.

Similarly, two versions of the A300-600's smaller and longer-range cousin, the A310 were offered: the basic A310-200, and the extended-range A310-300. Each was originally available in all-passenger and passenger/freight convertible form, but no factory freighter was produced.

All versions of the A300-600 and A310 are certified for 180-minute Etops missions. For this they are equipped with the required redundancy for AC generation and 260-minute continuous cargo-hold fire suppression.

Model & variant nomenclature

The extended-range variants of the A300-600s are identified with an additional 'R' suffix. Within each of these two groupings, the last two digits in the variant suffix indicate the engine type powering it. For example '-601', '-603' and '-605' (where the middle digit is '0')

all refer to specific General Electric (GE) engine types. The third digit refers to the specific GE engine model. That is, '-A1', '-A3', and '-A5'. Similarly, '-620' and '-622' (where the middle digit is '2') both refer to Pratt & Whitney engines. Moreover, within the extended-range family, there is a factory-built freighter version, denoted with an 'F4' in the model type. There was also a very small number of hybrid A300-600R 'convertible' versions built. To summarise, there are three principal airframe versions of the A300-600: the baseline A300B4-600, the A300B4-600R and the A300F4-600R. The latter features a maindeck side cargo door, reinforced maindeck floor beams, bespoke cargo loading system on both decks, no cabin windows, and removal of passenger doors 2, 3, and 4 on both sides. In addition to this 'factory freighter', about 30 A300-600s have been converted from passenger to freighter configuration (See *Modification and upgrade programmes*, page 9).

A similar system of nomenclature applies to the A310-200 and -300 series, of which there are eight sub-variants. Four of these are -200s, and four are -300s. The extended-range variants of the A300-600 family are indicated by an 'R'. In the case of the A310 family, the -200 series is the basic model and the -300 series is the extended-range model.

Like the A300-600, the second and third digits in the A310's name suffix indicate the engine make and model. For example, a '0' middle digit indicates a GE powerplant, while a '2' denotes a P&W powerplant. In all cases, the third digit refers to a specific engine model. It should be noted that there was no A310 factory freighter variant. About 75 A310s operate as converted freighters, however.

For both the A300-600 and A310, there are further specification differences which are identified on the relevant Federal Aviation Administration (FAA) and European Aviation Safety Agency (EASA) type-certificate data sheet (TCDS). These differences mainly relate to maximum take-off weight (MTOW), maximum landing weight (MLW), maximum zero-fuel weight (MZFW), and fuel capacity options. Also identified in the aircraft TCDS are relevant engine types. In turn, each engine family has its own TCDS in which are specified respective engine-operating parameters, limits and options (such as exhaust gas temperature (EGT) margins, engine speed limits and thrust options).

A300-600 series

The A300B4-600 series features a longer fuselage section and the same two-crew EFIS flightdeck as the A310. The wing is essentially the same as on the original A300B2/4, but all -600Rs and

A300-600 AIRFRAME-ENGINE COMBINATIONS

Base model	Aircraft sub-variant	Aircraft configuration	Engine variant	Engine thrust lbs
A300-600	A300-601	Passenger	CF6-80C2A1	57,860
	A300-603	Passenger	CF6-80C2A3	58,950
	A300-620	Passenger	JT9D-7R4H1	56,000
	A300-622	Passenger	PW4158	58,000
	A300-622F	Freighter conversion	PW4158	58,000
A300-600R	A300-622R	Passenger	PW4158	58,000
	A300-622RF	Freighter conversion	PW4158	58,000
	A300-605R	Passenger	CF6-80C2A5	60,100
	A300-605RF	Freighter conversion	CF6-80C2A5	60,100
A300-600R	A300F4-605R	Factory freighter	CF6-80C2A5/A5F	60,100
	A300F4-622R	Factory freighter	PW4158	58,000
	A300C4-605R	Convertible	CF6-80C2A5	60,100
	A300C4-605R	Convertible	JT9D-7R4H1	56,000

some later-build -600s have small wingtip fences to reduce vortex drag. Other changes from the A300B include an increased use of composite materials in primary and secondary structures.

The A300-600's TCDS (document 'A35EU' revision 21, dated March 2007) specifies four engine options for the standard-range A300B4-600 series: the JT9D-7R4 rated at 56,000lbs thrust to power the A300B4-620; the PW4158 rated at 58,000lbs thrust to power the A300B4-622R; the CF6-80C2A1 rated at 57,860lbs thrust to power the A300B4-601; and the CF6-80C2A3 rated at 58,950lbs thrust to power the A300B4-603.

Regarding the certified weights, the standard-range A300B4-600 has an MTOW of 363,760lbs, MLW of 304,230lbs, and MZFW 286,600lbs. Meanwhile, fuel tankage for this model totals 16,380 US gallons (USG), with outboard tanks providing 2,450USG, inboard tanks providing 9,280USG and centre tanks providing 4,650USG.

The passenger version A300-600 series is certified to accommodate up to 345 passengers, although in typical two-class configuration, the aircraft seats up to 266. The maximum absolute load for the forward cargo compartment is 40,800lbs, while for the aft compartment it is 28,300lbs. The rear bulk compartment can support up to 6,110lbs. The lower deck can accommodate up to 23 LD-3 unit load devices (ULDs), or alternatively, four pallets plus up to 11 LD-3s, plus bulk volume of up to 610 cubic feet. The A300-600's standard range capability with 266 passengers plus baggage (56,000lbs approximate payload) is 3,600nm. With 266 passengers and 34,750lbs of freight, its range is about 2,200nm (*see table, page 6*).

The A300B4-600R series has two engine options listed in the A300 TCDS document (*see table, page 4*): the PW4158 rated at 58,000lbs thrust powering the A300B4-622R; and the CF6-80C2A5 rated at 60,100lbs thrust powering the A300B4-605R.

In contrast to the standard-range A300B4-600, the A300B4-600R is specified in four different weight variants: MTOWs range from 369,930lbs to 378,530lbs; MLWs from 304,235lbs to 308,650lbs; and MZFWs from 271,170lbs to 288,800lbs (*see table, page 6*). The maximum passenger loads, as well as the maximum absolute loadings for the forward, aft and bulk cargo/baggage compartments, are all the same as those of the basic A300B4-600 passenger version.

In terms of fuel capacity, the '-R' model is fitted with a supplementary tail 'trim tank', which brings the total fuel load to 18,000USG, thereby providing an

A310 AIRFRAME-ENGINE COMBINATIONS

Base model	Aircraft sub-variant	Aircraft configuration	Engine variant	Engine thrust lbs
A310-200	A310-221	Passenger	JT9D-7R4D1	48,000
	A310-222	Passenger	JT9D-7R4E1	50,000
	A310-222F	Freighter conversion	JT9D-7R4E1	50,000
	A310-203	Passenger	CF6-80A3	48,970
	A310-203F	Freighter conversion	CF6-80A3	48,970
	A310-204	Passenger	CF6-80C2A2	52,460
	A310-204F	Freighter conversion	CF6-80C2A2	52,460
	A310-300	A310-322	Passenger	JT9D-7R4E1
A310-324		Passenger	PW4152	52,000
A310-324F		Freighter conversion	PW4152	52,000
A310-304		Passenger	CF6-80C2A2	52,460
A310-325		Passenger	PW4156A	56,000
A310-308		Passenger	CF6-80C2A8	57,860
A310-308F		Freighter conversion	CF6-80C2A8	57,860

extra 1,620USG. This higher fuel capacity gives the A300-600R a range of about 4,000nm with 266 passengers and baggage. Range is about 2,600nm with 266 passengers plus 34,250lbs of freight.

The A300F4-600 factory freighter has the same engine type options and related '-622' and '-605' variant designations, thrust ratings, and fuel tank arrangement and capacities as the A300B4-600R passenger version detailed above. The F4's weight variant specifications differ slightly to the passenger version. MTOWs range from 363,990lbs to 375,890lbs, MLWs from 303,970lbs to 315,900lbs, and MZFWs from 286,600lbs to 300,930lbs. It should be noted that the F4 variant can either be fitted with all the tanks activated, or the trim and centre tanks may be deactivated in conjunction with an increased MZFW to allow a greater payload to be carried over shorter mission ranges.

The F4 also has an optional 'payload' mode. According to Airbus, where fuel capacity is reduced from 18,000USG to 11,730USG, the maximum structural payload is increased to 118,390lbs at the expense of range. In this case, MZFW also has to be increased to 295,000lbs and MLW to 309,950lbs.

As a full freighter, the A300F4-600's lower and main deck maximum certified loadings are as follows: 40,800lbs for the lower forward compartment; 30,400lbs for the lower aft compartment; and 3,900lbs for the lower bulk compartment. The maindeck cargo compartment can have a maximum of 100,900lbs. It should be noted that these are the absolute certified loadings, whereas the actual overall maximum loadings for a given mission will be subject to MZFW, MTOW and weight and balance restrictions. Operationally,

the freighter can accommodate up to 15 pallets. These are nine 88/96-inch X 125-inch pallets and six 88-inch X 125-inch pallets on the main deck.

According to Airbus other arrangements include: 16 88-inch X 125-inch main deck pallets; 14 96-inch X 125-inch pallets; or 21 88-inch X 125-inch pallets, with 18 in a double row. On the lower deck, the aircraft has exactly the same pallet/ULD capability as the passenger variant. This is either an arrangement of four pallets plus 11 LD-3s, or 23 LD-3s. The aircraft's maximum structural payload capacity is 121,100lbs. The maindeck's structural capacity is 101,000lbs (*see table, page 6*).

The A300F4-600 can carry a 121,100lbs structural payload up to 1,950nm, while the aircraft can operate up to 2,650nm with a lighter 112,750lbs payload. However, practical examples cited by Airbus show that the aircraft can carry an 80% volumetric payload of 97,200lbs up to 3,350nm. This would allow routes such as New York-Anchorage, New York-London, London-Dubai, or Dubai-Singapore.

A310-200 and -300

Airbus developed the A310 by mating a shortened A300B4-200 fuselage with a smaller, more advanced wing, revised wingtip fences (a design later adapted for the A320 and now also the A380), and new horizontal tail surfaces. It also fitted a two-crew EFIS flightdeck as standard (the A310 being the first Airbus to have this feature), and a modified landing gear. Airbus has built two major A310 variants: the medium-range -200 and the longer-range -300. The latter also features a new computerised fuel distribution system, and can accommodate up to two

A300-600 & A310 FAMILY SPECIFICATIONS

Aircraft variant	A300-600	A300-600R	A300F4-600R
MTOW options-lbs	363,760	369,930/375,890/378,530	363,990/370,375/375,890
MLW options-lbs	304,230	304,235/308,650	303,970/308,650/315,900
MZFW options-lbs	286,600	271,170/286,600/288,800	286,600/294,980/300,930
OEW typical-no tare-lbs	198,600	199,000	174,200
Typical structural payload (gross) - lbs	56,000	56,000	97,200-121,100
Maximum structural payload (gross) - lbs	88,050	87,600	121,100
Fuel capacity-USG	16,380	18,000	11,730-18,000
Typical 2-class passengers	266	266	N/A
Belly freight maximum loading-lbs	75,210	75,210	75,210
Belly freight containers	23 LD-3s	23 LD-3s	23 LD-3s
Main deck maximum freight-lbs	N/A	N/A	101,000
Main deck freight containers	N/A	N/A	16 88 X 125 pallets
Typical range-nm	3,600	4,000	1,950-2,650

Aircraft variant	A310-200	A310-300
MTOW options-lbs	291,007/305,558/313,053	330,750/337,365/346,185/361,620
MLW options-lbs	261,247/267,859	271,215/273,420
MZFW options-lbs	239,201/245,813	249,165/251,370
OEW typical-no tare-lbs	177,600	178,200
Typical structural payload (gross) - lbs	44,000	44,000
Maximum structural payload (gross) - lbs	73,450	72,900
Fuel capacity-USG	14,558	16,140/19,940
Typical 2-class passengers	220	220
Belly freight maximum loading-lbs	55,105	55,105
Belly freight containers	15 LD-3s	15 LD-3s
Main deck maximum freight-lbs	N/A	N/A
Typical range-nm	3,600	4,300-5,150

1,900 USG auxiliary centre tanks (ACTs) in the rear cargo hold if required.

The A310-200 has four certified engine options: the CF6-80A3 rated at 48,970lbs thrust for the A310-203; the CF6-80C2A2 rated at 52,460lbs thrust for the A310-204; the JT9D-7R4D1 rated at 48,000lbs thrust for the A310-221; and the JT9D-7R4E1 rated at 50,000lbs thrust for the A310-222 (see table, page 5).

The A310-200 is specified with four different weight variants: MTOWs range from 291,007lbs to 313,053lbs; MLWs from 261,247lbs to 267,859lbs; and MZFWs from 239,201lbs to 245,813lbs (see table, this page).

The A310-200 series is certified to accommodate up to 265 passengers when equipped with 'Type-III' over-wing emergency exits. The maximum absolute freight load for the forward lower cargo compartment is 27,999lbs, and 20,999lbs for the aft lower compartment. The rear bulk compartment can support up to 6,107lbs. The lower freight compartment can accommodate freight in 16 LD-3s, or three pallets plus six LD-3s plus either 610 or 318 cu ft bulk (see table, this

page).

Typical two-class seating capacity is 220 passengers. Fuel capacity for this model comprises 1,980USG in outboard tanks, 7,384USG in inboard tanks, and 5,194USG in centre tanks. Total useable fuel capacity for the A310-200 series is therefore 14,558USG. Range with 220 passengers plus baggage is about 3,600nm, while with 220 passengers and 29,450lbs of cargo the range is about 2,100nm.

For the A310-300, the TCDS specifies five certified engine options: the CF6-80C2A2 rated at 52,460lbs thrust powering the A310-304; the CF6-80C2A8 rated at 57,860lbs thrust powering the A310-308; the JT9D-7R4E1 rated at 50,000lbs thrust powering the A310-322; the PW4152 rated at 52,000lbs thrust powering the A310-324; and the PW4156A rated at 56,000lbs thrust powering the A310-325.

The A310-300 is specified with five different weight variants. MTOWs range from 330,750lbs to 361,620lbs; MLWs from 271,215lbs to 273,420lbs; and MZFWs from 249,165lbs to 251,370lbs (see table, this page). The maximum

passenger capacity and the maximum absolute floor loadings for the lower deck forward, aft and bulk cargo/baggage compartments are all the same as those of the A310-200.

Fuel capacity totals 16,140USG, with the outboard tanks providing 1,955USG, the inboard tanks 7,371USG, the centre tanks 5,189USG, and a supplementary trim-tank in the tail providing 1,625USG. In addition, the -300 can have optional fuel tanks in the cargo hold to raise total fuel capacity to 19,940USG. However, additional fuel will be at the expense of maximum structural payload capacity.

In terms of payload-range, the A310-300 (361,600lbs MTOW version) equipped with ACTs can fly 220 passengers plus baggage a distance of 5,150nm. Without ACTs, the aircraft can fly 220 passengers plus baggage up to 4,300nm. With 220 passengers and 15,000lbs additional cargo, the A310-300 flies up to 4,050nm. [AC](#)

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