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## **I. General**

### **1. Type/Models:**

AS907-1-1A, AS907-2-1G

### **2. Type Certificate Holder:**

Honeywell International Inc.  
111 South 34<sup>th</sup> Street  
Phoenix  
AZ 85034  
USA

**3. Manufacturer:** Honeywell International Inc.

### **4. Certification Application Date:**

AS907-1-1A	09 November 1998
AS907-2-1G	30 May 2006

**5. Certification Reference Date:** 25 June 1999

### **6. EASA Certification Date:**

AS907-1-1A	22 October 2002
AS907-2-1G	22 July 2011

EASA Type Certification for the AS907-1-1A engine model is granted, in accordance with article 2 paragraph 3 (a)(i) of EU Commission Regulation EC 1702/2003, based on the JAA Validation Recommendation.

## **II. Certification Basis**

### **1. FAA Certification Basis details:**

See FAA TCDS E00010LA.

### **2. EASA Certification Basis:**

#### 2.1 Airworthiness Standards:

AS907-1-1A	JAR-E Change 10, dated 15 August 1999, plus NPA-E-13, dated 10 March 1999, plus NPA-E-20, dated 03 December 1999
AS907-2-1G	JAR-E Amendment 11, dated 01 November 2001, plus CS-E, Original Issue, dated 24 October 2003, paragraphs CS-E 50(f), CS-E 850 and CS-E 890

#### 2.2 Special Conditions:

AS907-1-1A	Certification of PLDs
AS907-2-1G	None

#### 2.3 Deviations:

None.

2.4 Equivalent Safety Findings:

AS907-1-1A	JAR-E890(b)1 – Thrust Reverser Endurance Tests
AS907-2-1G	None

2.5. Environmental Standards:

AS907-1-1A	ICAO Annex 16 Volume II, Amendment 2, dated 11 November 1993
AS907-2-1G	ICAO Annex 16 Volume II, Amendment 6, dated 20 November 2008

### III. Technical Characteristics

**1. Type Design Definition:**

AS907-1-1A	Equipment List 3030001-4
AS907-2-1G	Equipment List 3030002-1

**2. Description:**

Turbofan, one stage fan directly driven by a three-stage low pressure turbine, four-stage axial and single stage centrifugal compressor, driven by a two-stage high pressure turbine, annular combustor, bypass duct and exhaust mixer.

**3. Equipment:**

Engine equipment is specified by the Engine Equipment List part number as referenced in the Type Design Definition.

**4. Dimensions:**

	Overall Length mm	Overall Width mm	Overall Height mm
AS907-1-1A	2460	1120	1330
AS907-2-1G	2460	1156	1340

**5. Dry Weight:**

	Weight <sup>(1)</sup> kg
AS907-1-1A	696
AS907-2-1G	696

(1) The engine weight includes all components of the basic engine as defined by the approved Engine Equipment List. Components that are certified as part of the aircraft, but mounted on the engine, are not included in the weight.

**6. Ratings:**

	Static Thrust <sup>(1)</sup> kN	
	Maximum Continuous	Take off (5 minutes) <sup>(2)</sup>
AS907-1-1A	30.82	30.89
AS907-2-1G	32.63	34.54

- (1) The ratings are based on static test stand operation under the following conditions;
  - (a) Sea level standard day (ISA) conditions.
  - (b) No loading of aircraft accessory drives.
  - (c) No aircraft compressor bleed air extraction.
  - (d) Fan exhaust and turbine exhaust nozzles conforming to Honeywell International Inc. drawings N10780-1 and N10781-1.
  - (e) Bellmouth inlet conforming to Honeywell International Inc. drawing 5837800-1.
  - (f) Dry inlet air.
  - (g) No exhaust nozzle back pressure.
- (2) The normal 5 minutes take-off time may be extended to 10 minutes for engine out contingency.

### 7. Control System:

Fuel controls and power management are provided by a dual channel full authority digital electronic control (FADEC) in conjunction with a hydro-mechanical unit (HMU) incorporating an integral fuel pump. The configuration of this system, including hardware and software, is controlled by the approved engine equipment list for each specific engine model and aircraft application.

### 8. Fluids (Fuel/Oil/Additives)

See applicable Installation Manual.

### 9. Aircraft Accessory Drives:

Accessory Drive	Drive Type	Internal Spline Config.	RPM and Rotation Facing Drive End	Accessory Maximum Torque <sup>(2)</sup> Nm			Maximum Weight kg	Maximum Overhung Moment Nm <sup>(5)</sup>
				T <sub>c</sub>	T <sub>o</sub>	T <sub>s</sub>		
Generator/ Alternator D30 <sup>(1)</sup>	AS468B-AV1 modified as follows: rpm, torques, accessory weight and moment as shown	AS468B	13665 <sup>(3)</sup> CW	27.34	41.02 <sup>(4)</sup>	180.79	15.74	14.52
Hydraulic Pump D10 <sup>(1)</sup>	AS468B-AV1 modified as follows: rpm, torques, accessory weight and moment as shown	AS468B	5974 <sup>(3)</sup> CW	28.25	42.37 <sup>(4)</sup>	174.46	10.16	11.74

CW = clockwise  
T<sub>c</sub> = continuous torque

T<sub>o</sub> = torque overload (5 minutes per 4 hour period)  
T<sub>s</sub> = static torque

- (1) Accessory pads are identified by these symbols on the installation drawing
- (2) Total combined accessory power extraction limits are specified in the installation manual
- (3) Drive speeds are based on 100% design HP rotor speed of 28100 rpm
- (4) 5 minutes per 4 hour period
- (5) At quick attach/detach (QAD) interface

### 10. Maximum Permissible Air Bleed Extraction:

For all engine models, the bleed extraction limits are specified in the applicable Installation Manual.

## **IV. Operational Limits**

### **1. Temperature Limits:**

#### 1.1 Interstage Turbine Temperature (ITT) Limits:

	Maximum Temperature °C			
	Maximum Continuous	Take-off	Transient (20 seconds)	Starting
AS907-1-1A	928	946	962	See Installation Manual
AS907-2-1G	950	955	970	See Installation Manual

#### 1.2 Oil Inlet Temperature Limits:

	Maximum Temperature °C		Minimum Temperature °C	
	Continuous	Transient (2 minutes)	Continuous	Starting
AS907-1-1A	138	154	5	-40
AS907-2-1G	138	154	5	-40

#### 1.3 Fuel Inlet Temperature Limits:

Maximum: 85 °C with a vapour volume to liquid volume ratio (V/L) equal to 0.45  
Minimum: -54 °C with fuel at a viscosity of 12 centistokes or less during starting

### **2. Maximum Permissible Rotor Speeds:**

	Low Pressure Rotor (N1) rpm (%)			High Pressure Rotor (N2) rpm (%)		
	Maximum Continuous	Take-off	Transient (20 seconds)	Maximum Continuous	Take-off	Transient (20 seconds)
AS907-1-1A <sup>(1)</sup>	9723 (95.7)	9812 (96.6)	9957 (98.0)	27319 (97.2)	27568 (98.1)	28075 (99.9)
AS907-2-1G <sup>(1)</sup>	9800 (96.5)	9830 (96.8)	9957 (98.0)	27530 (98.0)	27686 (98.5)	28075 (99.9)

(1) 100% N1 = 10156 rpm, 100% N2 = 28100 rpm

### **3. Pressure Limits:**

#### 3.1 Fuel Pump Inlet pressure:

Minimum pressure: whichever is highest of the following:  
(a) 34.5 kPa above the true vapour pressure of the fuel  
(b) Pressure corresponding to a vapour-to-liquid ratio of 0.45  
(c) 35% of atmospheric pressure

Maximum pressure: 241 kPa

#### 3.2 Oil Pressure Limits:

Oil pressure is not regulated and varies with N2 speed. Refer to the applicable Installation Manual.

**4. Installation Assumptions:**

The installation assumptions are quoted in the applicable Installation Manual.

**5. Time Limited Dispatch:**

AS907-1-1A and AS907-2-1G engines have been approved for Time Limited Dispatch (TLD). Dispatchable states and the associated time limits and maintenance requirements are specified in the Airworthiness Limitations Section of the applicable Light Maintenance Manual.

**V. Operating and Service Instructions**

	Installation Manual	Operating Instructions	Light Maintenance Manual	Heavy Maintenance Manual
AS907-1-1A	IM-8014	IM-8014	72-05-12	72-05-13
AS907-2-1G	24-IM-8029	24-IM-8029	72-05-16	72-05-17

**VI. Notes**

- Note 1: For additional authorised operation and installation detailed information, refer to FAA approved sections of the applicable engine Installation Manual.
- Note 2: Certain engine parts are life-limited. These limits are published in the EASA-approved Airworthiness Limitations Section in chapter 5 of the applicable Light Maintenance Manual.
- Note 3: Power setting, power checks and control of engine thrust output in all operations is based on low pressure rotor speed (N1). Speed sensors are included in the engine assembly for this purpose.
- Note 4: The AS907-1-1A engine is approved for use with the following thrust reversers:

Manufacturer	Part Numbers	
	Left Hand	Right Hand
Aircelle (formerly Hurel-Hispano)	13A025-03-0G	13A026-02-0G
Aircelle (formerly Hurel-Hispano)	13A012-00-0G with installation kit 13A016-00-0G	13A013-00-0G with installation kit 13A017-00-0G

The AS907-2-1G engine is approved for use with the following thrust reversers:

Manufacturer	Part Numbers	
	Left Hand	Right Hand
Aircelle	31A512-00-0G with installation kit 31A515-00-0G	31A513-00-0G with installation kit 31A515-00-0G

- Note 5: The engine Type Design includes an air turbine starter (ATS) and starter control valve (ATSCV).
- Note 6: The software contained in the FADEC has been designed and developed in accordance with RTCA/DO178B, criticality Level A.
- Note 7: Fuel from the engine pump is used to drive jet or turbine pumps in the aircraft fuel system (motive flow). Refer to the applicable Installation Manual.

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