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## TYPE-CERTIFICATE DATA SHEET

No. IM.E.058

**for Engine**  
AS907 series engines

**Type Certificate Holder**  
Honeywell International Inc.  
111 South 34th Street  
Phoenix  
AZ 85034  
USA

For Models:

AS907-1-1A  
AS907-2-1G  
AS907-2-1A  
AS907-3-1E  
AS907-2-1S



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## **I. General**

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

AS907-1-1A, AS907-2-1G, AS907-2-1A, AS907-3-1E, AS907-2-1S

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

Honeywell International Inc.  
111 South 34th Street  
Phoenix  
AZ 85034  
USA  
Design Organisation Approval No.: Not Applicable

### **3. Manufacturer**

Honeywell International Inc.

### **4. Date of Application**

AS907-1-1A	09 November 1998
AS907-2-1G	30 May 2006
AS907-2-1A	01 April 2013
AS907-3-1E	26 November 2013
AS907-2-1S	01 March 2016

### **5. EASA Type Certification Date**

AS907-1-1A	22 October 2002
AS907-2-1G	22 July 2011
AS907-2-1A	02 September 2014
AS907-3-1E	05 December 2014
AS907-2-1S	20 February 2019

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. State of Design Authority Certification Basis**

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
AS907-2-1A	CS-E Amendment 3, dated 23 December 2010, except paragraph CS-E 515, plus JAR-E Amendment 11, dated 01 November 2001, paragraph JAR-E 515
AS907-3-1E	CS-E Amendment 3, dated 23 December 2010, except paragraph CS-E 515, plus JAR-E Amendment 11, dated 01 November 2001, paragraph JAR-E 515
AS907-2-1S	CS-E Amendment 3, dated 23 December 2010, except paragraph CS-E 515, plus JAR-E Amendment 11, dated 01 November 2001, paragraph JAR-E 515

### 2.2. Special Conditions (SC)

AS907-1-1A	Certification of PLDs
AS907-2-1G	None
AS907-2-1A	20 seconds Transient Over-temperature
AS907-3-1E	20 seconds Transient Over-speed
AS907-2-1S	Transient Over-temperature and Over-speed limit approval for up to 20 seconds

### 2.3. Equivalent Safety Findings (ESF)

AS907-1-1A	JAR-E890(b)1 – Thrust Reverser Endurance Tests
AS907-2-1G	None
AS907-2-1A	None
AS907-3-1E	None
AS907-2-1S	CS-E 40, CS-E 60 and CS-E 740-Approval for a single flight use of transient Over-temperature periods of up to 2 minutes

### 2.4. Deviations

None



## 2.5. Environmental Protection

AS907-1-1A	CS-34 Issue dated 23.10.2003 in accordance with ICAO Annex 16 Volume II, Amendment 6, dated 20 November 2008. The NOx Standard is in accordance with Part III, Chapter 2, § 2.3.2, d) (CAEP/6)
AS907-2-1G	CS-34 Amendment 4 as implemented by ED Decision 2021/011/R (applicable 25 July 2021), ICAO Annex 16 Volume II, Amendment 10 applicable 1 January 2021 as implemented into EU legislation 27 April 2021. NOx standard in accordance with ICAO Annex 16 Volume II, Part III, Chapter 2, § 2.3.2 d) (CAEP/6). Maximum nvPM mass concentration levels in compliance with Part III, Chapter 4, paragraph 4.2.2.1. nvPM mass and number emissions in compliance with Part III, Chapter 4, paragraph 4.2.2.2 a) 1) and 4.2.2.2 b) 1) (CAEP/11 In-Production standard).
AS907-2-1A	CS-34 Amendment 4 as implemented by ED Decision 2021/011/R (applicable 25 July 2021), ICAO Annex 16 Volume II, Amendment 10 applicable 1 January 2021 as implemented into EU legislation 27 April 2021. NOx standard in accordance with ICAO Annex 16 Volume II, Part III, Chapter 2, § 2.3.2 e) (CAEP/8). Maximum nvPM mass concentration levels in compliance with Part III, Chapter 4, paragraph 4.2.2.1. nvPM mass and number emissions in compliance with Part III, Chapter 4, paragraph 4.2.2.2 a) 1) and 4.2.2.2 b) 1) (CAEP/11 In-Production standard).
AS907-3-1E	
AS907-2-1S	

## III. Technical Characteristics

### 1. Type Design Definition

AS907-1-1A	Equipment List 3030001-4
AS907-2-1G	Equipment List 3030002-1 /-2
AS907-2-1A	Equipment List 70040702-1/-2
AS907-3-1E	Equipment List 70040119-1
AS907-2-1S	Equipment List 70041011-1

### 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	1156	1340
AS907-2-1G	2281	1156	1340
AS907-2-1A	2281	1156	1340
AS907-3-1E	2282	1116	1329
AS907-2-1S	2282	1156	1340

#### 5. Dry Weight

	Weight <sup>(1)</sup> kg
AS907-1-1A	696
AS907-2-1G	696
AS907-2-1A	696
AS907-3-1E	687
AS907-2-1S	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)(3)</sup> kN		Static Thrust <sup>(1)(4)</sup> kN	
	Maximum Continuous	Take off (5 minutes) <sup>(2)</sup>	Maximum Continuous	Take off (5 minutes) <sup>(2)</sup>
AS907-1-1A	30.63	30.73	30.82 at ISA +15°C	30.89 at ISA +20°C
AS907-2-1G	32.49	34.37	32.64 at ISA +17°C	34.54 at ISA +17°C
AS907-2-1A	33.39	33.39	33.50 at ISA +14°C	33.50 at ISA +20°C
AS907-3-1E	32.60	33.91	32.63 at ISA +22.5°C	33.98 at ISA +18°C
AS907-2-1S	32.90	34.04	33.04 at ISA +15°C	34.10 at ISA +18.9°C

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



## 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, Coolant, 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 18.46 <sup>(7)</sup>	14.52 21.47 <sup>(7)</sup>
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> 43.84 <sup>(4)(6)</sup>	174.46	10.16	11.74

CW = clockwise

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

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

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
- (6) AS907-3-1E model only
- (7) AS907-3-1E and AS907-2-1S models only

## 10. Maximum Permissible Air Bleed Extraction

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





#### **IV. Operating Limitation**

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

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

	Maximum Temperature °C			
	Maximum Continuous	Take-off	Transient	Starting
AS907-1-1A	928	946	962 <sup>(1)</sup>	See Installation Manual
AS907-2-1G	950	955	970 <sup>(1)</sup>	See Installation Manual
AS907-2-1A	950	955	970 <sup>(1)</sup>	See Installation Manual
AS907-3-1E	950	955	970 <sup>(2)</sup>	See Installation Manual
AS907-2-1S	950	955	970 <sup>(1)</sup>	See Installation Manual

(1) 20 seconds maximum

(2) 2 minutes maximum

###### **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
AS907-2-1A	138	154	5	-40
AS907-3-1E	138	154	5	-40
AS907-2-1S	138	154	5	-40

###### **1.3 Fuel Inlet Temperature Limits:**

	Maximum <sup>(1)</sup> °C	Minimum <sup>(2)</sup> °C
AS907-1-1A	85	-54
AS907-2-1G	85	-54
AS907-2-1A	85	-54
AS907-3-1E	55	-54
AS907-2-1S	85	-54

(1) With a vapour volume to liquid volume ratio (V/L) equal to 0.45

(2) With fuel at a viscosity of 12 centistokes or less during starting



## 2. Speed Limits

	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)	27599 (98.2)	27714 (98.6)	28075 (99.9)
AS907-2-1A <sup>(1)</sup>	9800 (96.5)	9830 (96.8)	9957 (98.0)	27530 (98.0)	27714 (98.6)	28075 (99.9)
AS907-3-1E <sup>(1)</sup>	9830 (96.8)	9830 (96.8)	9957 (98.0)	27599 (98.2)	27714 (98.6)	28075 (99.9)
AS907-2-1S <sup>(1)</sup>	9800 (96.5)	9830 (96.8)	9957 (98.0)	27599 (98.2)	27714 (98.6)	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
- (d) 13.8 KPa (absolute)

Maximum pressure: 241 kPa (gauge)

### 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 (TLD)

AS907-1-1A, AS907-2-1G, AS907-2-1A, AS907-3-1E and AS907-2-1S engines have been approved for Time Limited Dispatch. The maximum rectification period for each dispatchable state is specified in the Airworthiness Limitations Section of the applicable Light Maintenance Manual.

## 6. ETOPS Capability

AS907-1-1A, AS907-2-1G, AS907-2-1A, AS907-3-1E and AS907-2-1S engines are not approved for ETOPS capability in accordance with CS-E 1040.



## V. Operating and Service Instructions

	Installation Manual	Operating Instructions	Light Maintenance Manual	Heavy Maintenance Manual
AS907-1-1A	24-IM-8014	24-IM-8014	72-05-12	72-05-13
AS907-2-1G	24-IM-8029	24-IM-8029	72-05-16	72-05-17
AS907-2-1A	24-IM-8014	24-IM-8014	72-05-22	72-05-23
AS907-3-1E	24-IM-8030	24-IM-8030	72-05-19	72-05-20
AS907-2-1S	24-IM-8034	24-IM-8034	72-05-25	72-05-26

## 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: The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published 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 engine is approved for use with the thrust reversers (T/R) listed below. These thrust reversers are not part of the engine type design.

Engine model	T/R Manufacturer	T/R Part Numbers	
		Left Hand T/R installation drawing	Right Hand T/R installation drawing
AS907-1-1A	Safran Nacelles (formerly Aircelle and Hurel-Hispano)	13A025-03-0G	13A026-02-0G
	Safran Nacelles (formerly Aircelle and Hurel-Hispano)	13A016-00-0G	13A017-00-0G
AS907-2-1G	Safran Nacelles (formerly Aircelle)	31A516-01-0G	31A517-01-0G
AS907-2-1A	Safran Nacelles (formerly Aircelle)	33A016-01-0G	33A017-01-0G
AS907-3-1E	Safran Nacelles (formerly Aircelle)	32A716-02-0G	32A717-02-0G
AS907-2-1S	Safran Nacelles	35L0016-00-0	35L0017-00-0



- 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: For the AS907-1-1A, AS907-2-1G, AS907-2-1A and AS907-2-1S engines aircraft installations fuel from the engine pump is used to drive jet or turbine pumps in the aircraft fuel system (motive flow). The AS907-3-1E engine fuel pump does not drive aircraft system motive flow. Refer to the applicable Installation Manual.
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## **SECTION: ADMINISTRATIVE**

### **I. Acronyms and Abbreviations**

Not Applicable

### **II. Type Certificate Holder Record**

Not Applicable

### **III. Change Record**

<b>Issue</b>	<b>Date</b>	<b>Changes</b>	<b>TC issue</b>
Issue 01	22 July 2011	Initial Issue.	22 July 2011
Issue 02	8 January 2013	To include the compliance in accordance with NOx regulation of ICAO Annex 16, Volume II, Part III, Chapter 2, § 2.3.2 (d) (CAEP/6).	Not Applicable
Issue 03	2 September 2014	To add the AS907-2-1A Engine model.	2 September 2014
Issue 04	5 December 2014	To add the AS907-3-1E Engine model.	5 December 2014
Issue 05	22 February 2017	To introduce the latest EASA TCDS template. To introduce changes associated to Engine Control Unit Upgrade (EASA project 0010032318-001): N2 speed limits modification and alternative equipment list for AS907-2-1G Engine.	Not Applicable
Issue 06	20 February 2019	To add the AS907-2-1S Engine model. To introduce alternative equipment list for the AS907-2-1A model (EASA Major Change Approval 10066003). To correct the application date of some engine models.	20 February 2019
Issue 07	10 December 2019	Introduction of CAEP/10 for nvPM compliance (EASA Major Change approval 10071924)	Not Applicable
Issue 08	15 May 2020	Increase of AS907-3-1E engine N2 speed limits (EASA Major Change Approval 10073257)	Not Applicable
Issue 09	06 May 2022	Introduction of CAEP/11 for nvPM compliance (EASA Major Change approval 10079183)	Not Applicable

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