



TYPE-CERTIFICATE DATA SHEET

No. EASA IM.E.126

for
PW210 series engines

Type Certificate Holder
Pratt & Whitney Canada

1000 Marie-Victorin
Longueuil
Quebec
Canada J4G 1A1

For Models:
PW210S
PW210A
PW210A1



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TABLE OF CONTENTS

I. General	4
1. Type / Models	4
2. Type Certificate Holder	4
3. Manufacturer	4
4. Date of Application	4
5. EASA Certification Reference Date	4
6. EASA Type Certification Date	4
II. Certification Basis	4
1. State of Design Authority Certification Basis	4
2. Reference Date for determining the applicable airworthiness requirements	4
3. EASA Certification Basis	5
3.1. Airworthiness Standards	5
3.2. Special Conditions (SC)	5
3.3. Equivalent Safety Findings (ESF)	5
3.4. Deviations	5
3.5. Environmental Protection	5
III. Technical Characteristics	5
1. Type Design Definition	5
2. Description	5
3. Equipment	6
4. Dimensions	6
5. Dry Weight	6
6. Ratings	6
6.1 All Engine Operative Power (kW)	6
6.2 One Engine Inoperative Power (kW)	6
7. Control System	7
8. Fluids (Fuel, Oil, Coolant, Additives)	7
9. Aircraft Accessory Drives	7
10. Maximum Permissible Air Bleed Extraction	7
IV. Operating Limitations	8
1. Temperature Limits	8
2. Speed Limits	8
2.1 Maximum permissible Rotor Speeds (RPM)	8
2.1.1 All Engine Operative	8
2.1.2 One Engine Inoperative (OEI)	9
3. Torque Limits	9
4. Pressure Limits	10
4.1 Oil Pressure Limits	10
4.2 Fuel Pump Inlet Pressure	10
5. Time Limited Dispatch (TLD), see note 5	10
6. Installation Assumptions	10
7. ETOPS Capability	10
V. Operating and Service Instructions	10
VI. Notes	10
SECTION: ADMINISTRATIVE	11
I. Acronyms and Abbreviations	11
II. Type Certificate Holder Record	11
III. Change Record	11



I. General

1. Type / Models

PW210S, PW210A, PW210A1

2. Type Certificate Holder

Pratt and Whitney Canada
1000 Marie-Victorin
Longueuil,
Quebec
Canada J4G 1A1

3. Manufacturer

Pratt and Whitney Canada

4. Date of Application

PW210S	PW210A	PW210A1	
05 Jan 2006	21 July 2011	18 June 2020	

5. EASA Certification Reference Date

PW210S	PW210A	PW210A1	
16 October 2008	11 July 2011	18 June 2020	

6. EASA Type Certification Date

PW210S	PW210A	PW210A1	
5 July 2013	5 December 2014	15 April 2021	

II. Certification Basis

1. State of Design Authority Certification Basis

Refer to Transport Canada TCDS E-36

2. Reference Date for determining the applicable airworthiness requirements

Refer to Chapter I, point 5



3. EASA Certification Basis

3.1. Airworthiness Standards

PW210S	PW210A	PW210A1
CS-E Amendment 1	CS-E Amendment 3, dated 23 December 2010	

3.2. Special Conditions (SC)

PW210S	PW210A	PW210A1
Engine Operation in Auxiliary Power Unit (APU) Mode	-	
30 Minute Take-Off Power Rating		

3.3. Equivalent Safety Findings (ESF)

PW210S	PW210A	PW210A1
None		

3.4. Deviations

PW210S	PW210A	PW210A1
None		

3.5. Environmental Protection

PW210S	PW210A	PW210A1
CS-34.1. Fuel Venting		

III. Technical Characteristics

1. Type Design Definition

As defined by the applicable Engine Assembly Drawings:

PW210S	PW210A	PW210A1
30L0022	30L1860	

2. Description

Compressor rotor, comprising of a single mixed flow and a single centrifugal flow rotors, driven by a single stage high pressure turbine rotor. Combustion system comprised of a reverse flow annular combustor. A two-stage power turbine drives the helicopter rotor system through an engine reduction gearbox. The engine incorporates a self-contained oil system comprising of an oil tank and air-cooled oil cooler. The engine is controlled by a dual channel EEC without manual back-up. The starter and engine mounts are not part of the engine definition.



3. Equipment

The engine equipment list is included in the Type Design Definition.

4. Dimensions

Model	Overall Length	Radial Projection
PW210S	1.11 m	0.39 m
PW210A		0.38 m
PW210A1		

5. Dry Weight

Model	Dry Weight
PW210S	162.4 kg
PW210A	161.2 kg
PW210A1	

The Dry Weight includes Pratt & Whitney Canada supplied engine build-up components.

6. Ratings

The engine ratings are based on dry sea level ICAO standard atmospheric conditions, with no external accessory loads and no air bleed. The quoted ratings are obtainable on a test stand with the fuel, oil, reference intake and exhaust ducts as specified in the relevant Installation Manual.

6.1 All Engine Operative Power (kW)

Model	30 Minutes Power Take-off Power (5 minutes)	Maximum Continuous Power	Output shaft speed (rpm)
PW210S ⁽¹⁾	599		6409
PW210A ⁽²⁾	652.8	614.9	14832
PW210A1 ⁽²⁾			

1. PW210S Power at 107.0 % output shaft speed = 6409 rpm
2. PW210A / PW210A1 Power at 103.0 % output shaft speed = 14832 rpm

6.2 One Engine Inoperative Power (kW)

PW210S:

30-second OEI	2-minute OEI	Continuous OEI	Output shaft speed
837	814	766	6409 rpm



PW210A/PW210A1:

	Flat 30-sec and 2-min OEI*	Continuous OEI	Output shaft speed
PW210A	905.5	768.6	14832 rpm
PW210A1	946.1		

* "Flat 30-sec & 2-min OEI rating" is the combination of the 30-Second OEI Power and 2-Minute OEI Power identical ratings.

7. Control System

Fuel control, IGV actuator and power management are controlled by a dual channel Engine Electronic Control. The engine control system hardware, software and components compatibility are controlled by part number in a SCID (System Configuration Identification Document).

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

See applicable Engine Maintenance Manual for specific approved oil, fuel and additives.

9. Aircraft Accessory Drives

Model	Drive	Rotation	Speed Ratio	Max. Torque Continuous Nm	Max. Torque Static Nm	Max. Moment Overhang Nm
PW210S	Starter Generator	CW	0.235:1(1)	21.01 (3) 56.95 (4)	198.9	17.29
	AC Generator	CW	0.454:1 (2)	28.1	198.9	21.47
PW210A / PW210A1	Starter Generator	CW	0.251:1 (1)	16.00 (3) 56.94 (4)	146.9	16.94

- (1) Ratio to Gas Generator Speed,
- (2) Ratio to Power Turbine Speed,
- (3) Generator mode
- (4) Starting mode

10. Maximum Permissible Air Bleed Extraction

The maximum permissible air bleed extraction is 6% of the engine inlet airflow and nil during start. Refer to Installation Manual Section 2.



IV. Operating Limitations

1. Temperature Limits

1.1 Maximum Measured Gas Turbine Temperature Limits (°C):

Ratings and Transient	PW210S	PW210A	PW210A1
	Inter Turbine Temperature (°C)		
30 second OEI	1006	N/A	
2-minute OEI	980		
Flat* 30 second- & 2-minute OEI	N/A	1020	
Continuous OEI Power	924	941	937
30 Minute Power		930	
Take-Off (5 minutes)**			
Maximum Continuous	886	868	
Starting (2 seconds)	825		
APU mode	760	N/A	
Transient (20 seconds)	980	941	
OEI Control Overshoot (5 s)	+9	+11	

(*) "Flat 30-sec & 2-min OEI rating" is the combination of the 30-Second OEI Power and 2-Minute OEI Power identical ratings.

(**) Refer to Installation Manual for initial Take-off ITT limit setting

1.2 Oil Temperature

Refer to Installation Manual Section 2

1.3 Fuel Inlet Temperature

Refer to Installation Manual Section 5

2. Speed Limits

2.1 Maximum permissible Rotor Speeds (RPM)

2.1.1 All Engine Operative

Model	Rotor Shaft	30 Min. Power	Take-off (5 Minutes)	Maximum Continuous	Transient 20 seconds
PW210S	Gas Generator	51000		50400	51900
	Power Turbine	28692			31211
	Output Shaft	6514			7085
PW210A / PW210A1	Gas Generator	50100		49200	50430
	Power Turbine	28120			30293
	Output Shaft	15372			16560



100% reference speeds:

	PW210S	PW210A	PW210A1
Gas Generator	51000		
Power Turbine	26383	26342	

2.1.2 One Engine Inoperative (OEI)

PW210S:

Rotor Shaft	30-second OEI	2-minute OEI	Continuous OEI	OEI Control overshoot (5 seconds)
Gas Generator	52400	51900	51000	-
Power Turbine	28692			30341 (=+1649)
Output Shaft	6514			-

PW210A:

Rotor Shaft	Flat 30-sec and 2-min OEI	Continuous OEI	20 second transient	OEI Control overshoot (5 seconds)
Gas Generator	51360	50430	-	+255
Power Turbine	28120		30293	-
Output Shaft	15372		-	-

PW210A1:

Rotor Shaft	Flat 30-sec and 2-min OEI	Continuous OEI	20 second transient	OEI Control overshoot (5 seconds)
Gas Generator	51360	50400	-	+255
Power Turbine	28120		30293	
Output Shaft	15372		-	

3. Torque Limits

Max Permissible Torque Limits (Nm)

	30-second OEI	2-minute OEI	Flat 30-second / 2-minute OEI	Continuous OEI	30 Minute Power / Take-off (5 minutes)	Maximum Continuous	Transient (20 seconds)
PW210S	1248	1212	-	1147	892		1212
PW210A	-		583	494.9	420.3	395.9	641.3
PW210A1			617.6				650.9



4. Pressure Limits

4.1 Oil Pressure Limits

Refer to Installation Manual Section 2

4.2 Fuel Pump Inlet Pressure

Refer to Installation Manual Section 5

5. Time Limited Dispatch (TLD), see note 5

The engine is approved for Time Limited Dispatch in accordance with CS-E 1030. The maximum rectification period for each dispatchable state is specified in the Airworthiness Limitations Section of the applicable maintenance manual

6. Installation Assumptions

The engine is approved for multiple engine installation only.
Refer to Section 1 of the Installation Manual for Safety Analysis assumptions.

7. ETOPS Capability

Not Applicable, the engine is not approved for ETOPS capability in accordance with CS-E 1040.

V. Operating and Service Instructions

Manuals	PW210S	PW210A / PW210A1
Engine Maintenance Manual, incl. airworthiness Limitations Section	30L0892	30L2392
Engine Overhaul Manual	30L0893	30L2393
Installation Manual	30L2170 (ER 6421)	30L2374 (ER 7434)
Operating Instruction Manual		
FADEC Interface Control Document	ER 6368	ER 7436

VI. Notes

Note 1: Lightning protection levels and electromagnetic interference are specified in the Installation Manual, Section 6.

Note 2: The Electronic Engine Control Unit must not be installed in a designated fire zone.

Note 3: The engines are approved to be fitted to rotorcraft only where the installation precludes foreign objects from entering the engine inlet as defined in CS-E 790(b) and CS-E 800.



Note 4: The EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable "Engine Maintenance Manual" document, Section "Airworthiness Limitations".

Note 5: The engine is equipped with a FADEC which is approved for Time Limited Dispatch (TLD). The dispatch criteria are defined in the Airworthiness Limitations Section of the Maintenance Manual. The TLD dispatchable fault configurations are defined in Electrical Interface Control document.

Note 6: The engine meets the CS requirement for operation in icing conditions within the envelope defined in FAR/CS-29 Appendix C when installed and operated in accordance with the Installation Manual.

Note 7: For One Engine Inoperative (OEI) limits and appropriate maintenance actions refer to the Airworthiness Limitations Section of the Maintenance Manual

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SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

n/a

II. Type Certificate Holder Record

n/a

III. Change Record

Issue	Date	Changes
Issue 01	4 July 2013	Initial Issue, PW210S
Issue 02	05 December 2014	Introduction new Model PW210A
Issue 03	09 December 2014	editorial
Issue 04	03 August 2015	editorial
Issue 05	15 April 2021	Introduction new model PW210A1

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