Civil Aviation Authority
United Kingdom

TYPE-CERTIFICATE DATA SHEET

UK.TC.E.00008
for
PW210 series engines

Type Certificate Holder
Pratt & Whitney Canada

1000 Marie-Victorin
Longueuil
Quebec
Canada J4G 1A1

Model(s):	PW210S PW210A PW210A1
Issue:	1
Date of issue:	23 August 2021

EXPLANATORY NOTE

This Type-Certificate Data Sheet (TCDS) is the concise definition of the type-certificated product accepted and or approved by the CAA in the UK for the affected types and models.

This TCDS includes:

1. Details of the type design that affect the TCDS that have been approved or accepted by the CAA in the UK since 01 January 2021.
2. Attachment 1 is a copy of the EASA IM.E.126 at Issue 04 dated 03 August 2015 which was the EASA version at 31 December 2020 and therefore the version of the TCDS for the PW210 series engine accepted by the UK in accordance with Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.
3. Where there has been no change to Attachment 1, this will be stated in this TCDS as 'no change'.

Table of Content

I. General

1. Type / Models

PW210A1

2. Type Certificate Holder

No change.

3. Manufacturer

No change.

4. Date of Application

PW210A1	
03 March 2021	

5. CAA Certification Reference Date

PW210A1	
18 June 2020	

6. CAA Type Certification Date

PW210A1	
23 August 2021	

II. Certification Basis

1. State of Design Authority Certification Basis

No change.

2. Reference Date for determining the applicable airworthiness requirements

No change.

3. UK CAA Certification Basis

3.1. Airworthiness Standards

PW210A1
CS-E Amendment 3, dated 23 December 2010

3.2. Special Conditions (SC)

PW210A1
30 Minute Take-Off Power Rating

3.3. Equivalent Safety Findings (ESF)

PW210A1
None

3.4. Deviations

PW210A1
None

3.5. Environmental Protection

PW210A1
CS-34.1. Fuel Venting

III. Technical Characteristics

1. Type Design Definition

As defined by the applicable Engine Assembly Drawings:

PW210A1
30L1860

2. Description

No change.

3. Equipment

No change.

4. Dimensions

Model	Overall Length	Radial Projection
PW210A1	1.11 m	0.38 m

5. Dry Weight

Model	Dry Weight
PW210A1	161.2 kg

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)

For clarity section 6.1 is reproduced from Attachment 1. Details for PW210A1 added.

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)

PW210A1:

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

** "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

No change.

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

No change.

9. Aircraft Accessory Drives

For clarity section 9 is reproduced from Attachment 1. Details for PW210A1 added**.**

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

No change.

IV.**Operating Limitations**

1. Temperature Limits

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

Ratings and Transient	**PW210A1**
	Inter Turbine Temperature (°C)
30 second OEI	NA
2-minute OEI	
Flat* 30 second- & 2-minute OEI	1020
Continuous OEI Power	937
30 Minute Power	
Take-Off (5 minutes) **	
Maximum Continuous	868
Starting (2 seconds)	825
APU mode	NA
Transient (20 seconds)	941
OEI Control Overshoot (5 s)	+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

No change.

1.3 Fuel Inlet Temperature

No change.

2. Maximum Permissible Rotor Speeds (rpm):

2.1 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	28692	31211
	Output Shaft	6514	6514	7085
PW210A1	Gas Generator	50100	49200	50430
	Power Turbine	28120	28120	30293
	Output Shaft	15372	15372	16560

(*) PW210S is included to rectify typographical error for Maximum Continuous speed within the Attachment 1

100% reference speeds:

	PW210A1
Gas Generator	51000
Power Turbine	26342

2.2 One Engine Inoperative (OEI)

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)
PW210A1	-		617.6	494.9	420.3	395.9	650.9

4. Pressure Limits

4.1 Oil Pressure Limits

No change

4.2 Fuel Pump Inlet Pressure

No change

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

No change

6. Installation Assumptions

No change

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	**PW210A1**
Engine Maintenance Manual, incl. airworthiness Limitations Section	30L2392
Engine Overhaul Manual	30L2393
Installation Manual	30L2374 (ER 7434)
Operating Instruction Manual	
FADEC Interface Control Document	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 CAA 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

VII. ADMINISTRATIVE

I. Acronyms and Abbreviations

Acronym / Abbreviation	Definition
CAA	Civil Aviation Authority
EASA	European Union Aviation Safety Agency
OSD	Operational Suitability Data
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCH	Type Certificate Holder

II. Type Certificate Holder Record

TCH Record	Period
Pratt & Whitney Canada 1000 Marie-Victorin Longueuil Quebec Canada J4G 1A1	Present. No changes.

III. Change Record

Issue	Date	Changes
Issue 01	23 August 2021	Initial Issue. Introduction of new model PW210A1 Correction to Maximum Continuous speed for PW210S.

Attachment 1

EASA.IM.E.126 Issue 4
Pratt and Whitney PW

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