ANAC
AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

TYPE CERTIFICATE DATA SHEET Nº EM-2014T02

EM-2014T02-00
Sheet 01
PRATT & WHITNEY
PW210S
10 April 2014

Type Certificate Holder:

PRATT & WHITNEY CANADA, CORP.
(Formerly Pratt & Whitney Canada Inc.)
1000 Marie Victorin
Longueuil, Quebec, J4G 1A1
CANADA

Engines of models described herein conforming with this data sheet, which is part of Type Certificate No. 2014T02, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Brazilian Aeronautical Regulations provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other instructions.

MODEL PW210S

TYPE Twin spool free turbine turboshaft engine controlled by a Full Authority Digital Electronic Control (FADEC), with one mixed flow and one centrifugal flow compressor driven by a single turbine, annular reverse-flow combustor and a reduction gearbox driven by power turbines.

RATINGS (See Note 4)

Output Shaft Power, kW (SHP)	PW210S
Maximum continuous	599 (802.5)
Maximum takeoff	599 (802.5)
Continuous OEI	766 (1 027.1)
30-second OEI	837 (1 123.4)
2-minute OEI	814 (1 091.3)
30-minute Hover	599 (802.5)

FUEL TYPE

Fuel types and additives conforming to the specifications listed in applicable P&WC Maintenance Manual are approved for use. Refer to Section 6 of the Installation Manual for fuel pressure and temperature limits.

OIL TYPE

Oil types, brand and additives conforming to the specifications listed in applicable P&WC Maintenance Manual are approved for use. Refer to Table 2-1of the Installation Manual for oil pressure and temperature limits.

OIL CAPACITY

	Liters	Imp. Gallons	U.S. Gallons
Total:	4.85	1.067	1.281
Useable:	1.05	0.231	0.277

TEMPERATURE LIMITS For engine indicated turbine temperature limits, see Note 1.

TORQUE LIMITS For engine output shaft torque limits, see Note 2.

ROTOR SPEED LIMITS For engine rotor sped limits, see Note 3.

AIR BLEED Refer to Section 2 of applicable P&WC Installation Manual.

DIMENSIONS AND WEIGHT For dimensions, weight and CG, refer to Installation Manual.

EQUIPMENTS AND COMPONENTS Electronic Engine Control, Fuel Control Unit (includes Fuel Pumps, Filter and Permanent Magnet Alternator), Air Cooled Oil Cooler, Fuel Oil Heat Exchanger, IGV Actuator and Ignition System (airframe powered) are included as per approved Parts List. Required equipment includes Chip Detector or other metallic debris detecting device.

IMPORT REQUIREMENTS Each engine imported separately and/or spare parts must be accompanied by an Airworthiness Certificate for Export and/or an Airworthiness Approval Tag, respectively, issued by Transport Canada Civil Aviation (or a third country authority, in case of used engine imported from such country) attesting that the particular engine and/or parts were submitted to the governmental quality control before delivery and are in conformity with the ANAC approved type design. The ANAC type design corresponds to the TCCA approved type design, as stated in ANAC report number V.33-1061-00 dated 10 April 2014 or further revisions.

CERTIFICATION BASIS RBAC 33 corresponding to 14 CFR Part 33, including Amendments 33-1 through 33-24 and two Special Conditions, raised by TCCA:

- SCA 2007-02 "Engine Operation in Auxiliary Power Unit (APU) Mode";
- SCA 2007-09 "New Engine Rating: 30-Minute Hovering Power".

Model	Application	Issued TC
PW210S	08 October 2013	10 April 2014

NOTES

NOTE 1 Engine Interturbine Temperature Limits, °C (°F)

	PW210S
Maximum continuous	886 (1 627)
Maximum takeoff	924 (1 695)
Continuous OEI	924 (1 695)
30-second OEI	1 006 (1 843)
2-minute OEI	980 (1 796)
OEI Overshoot (5 sec.)	+5 (+9)
30-minute Hover	924 (1 695)
Transient (20 sec.)	980 (1 796)

NOTE 2 Engine Output Shaft Torque Limits, N.m (lb.ft)

	PW210S
Maximum continuous	892 (657.6)
Take-off (5 min.)	892 (657.6)
Continuous OEI	1 142 (841.7)
30-second OEI	1 248 (920.6)
2-minute OEI	1 212 (894.3)
OEI Overshoot (5 sec.)	+44.6 (+33)
30-minute Hover	892 (657.6)
Transient (20 sec.)	1 212 (894.3)

NOTE 3 Engine Rotor Speed Limits, rpm

	PW210S
Gas Generator Speed Ng maximum	
Maximum continuous	50 400
Take-off (5 min.)	51 000
Continuous OEI	51 000
30-second OEI	52 400
2-minute OEI	51 900
OEI Overshoot (5 sec.)	+255
30-minute Hover	51 000
Transient (20 sec.)	51 900
Minimum Idle and APU mode	29 063
Power Turbine Speed Np maximum	28 692
Transient (20 sec.)	31 211
Output Shaft Speed maximum continuous	6 514
Transient (20 sec.)	7 085

NOTE 4 The engine ratings are based on dry sea level static ICAO standard atmospheric conditions, with no accessory loads or air bleed. The quoted ratings are obtainable on a test stand with the specified fuel and oil, and using the exhaust outer duct P/N PWC65198, the inner exhaust P/N PWC65199 and inlet plenum PWC65197, as specified in the applicable P&WC Installation Manual.

NOTE 5 The conditions for starting, running or stopping the engine with the output shaft locked by an aircraft provided rotor blade are specified in the Installation Manual.

NOTE 6 The PW210S engine is approved for multiple-engine installations only. Refer to Section 1 of Installation Manual for safety analysis assumptions.

NOTE 7 The PW210S engine meets Transport Canada Civil Aviation and Brazilian equivalent requirements for operation in icing conditions. It also meets the requirements of Canadian Airworthiness Manual Chapter 533.27 and does not require external armouring.

NOTE 8 Life limits for critical rotating components are published in the Airworthiness Limitations section of each Maintenance Manual.

NOTE 9 Required inspections after any use of 30 seconds or 2 minutes OEI power rating are contained in the Airworthiness Limitation Section of each Maintenance Manual.

NOTE 10 The engine meets the requirements of RBAC (which endorses the 14 CFR) §§ 33.68, 33.76, 33.77 and 33.78 when installed in accordance with the Pratt & Whitney Canada Installation Manual Instructions.

NOTE 11 The Electronic Engine Control (ECU) has not been fire tested and therefore must not be installed in a designated fire zone.

NOTE 12 The software contained in the Electronic Engine Control (ECU) has been designed, developed, tested, and documented in accordance with the provisions of Critical Category Level A of RTCA/DO178B and the CPLD meet Level A of RTCA/DO254.

NOTE 13 The PW210S engine can be operated with certain detected FADEC faults in accordance with TLD policy. Aircraft considerations are contained in the Installation Manual, and time limits are contained in the Airworthiness Limitations Section of the Maintenance Manual.

NOTE 14 Approved Publications:

- Installation Manual P/N 30L2170 (ER 6421)
- FADEC Interface Control Document ER 6368
- Airworthiness Limitation Section P/N 30L0892

NOTE 15 Instructions for Continued Airworthiness:

- Maintenance Manual (EMM) P/N 30L0892
- Overhaul Manual P/N 30L0893

NOTE 16 HIRF/Lightning protection and Electromagnetic Interference (EMI) emitted by the EEC System, including cables, are specified in the Installation Manual, Section 6.

NOTE 17 Service Bulletins, Structural Repair Manuals, Vendor Manuals, Aircraft Flight Manual and Overhaul and Maintenance Manuals, with contain a statement that the document is Transport Canada-approved, are acceptable by the ANAC and are considered ANAC-approved unless otherwise noted. These approvals pertain to the type design only.

HÉLIO TARQUÍNIO JÚNIOR
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