U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET NUMBER : E00067EN	E00067EN REVISION:7 Société de Motorisations Aéronautiques (SMA) MODELS: SR305-230 SR305-230E February 5, 2013

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00067EN) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations, provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

TYPE CERTIFICATE (TC) HOLDER Société de Motorisations Aéronautiques (SMA)
10-12 rue Didier Daurat
F18021 Bourges Cedex
FRANCE

I. MODELS	**SR305-230**	**SR305-230E**
TYPE	The SR305-230 and SR305-230E are 4 stroke diesel cycle piston engines (4988 cm^3) air cooled with a secondary oil cooling system. Engines are equipped with a direct injection system and are turbocharged with air/air intercooling. The engines are direct drive with flat four cylinders, horizontally opposed	
RATINGS (U.S Standard Atmosphere at Sea Level Pressure Altitude) Takeoff, HP(KW)) Maximum duration Max Continuous, HP(KW) Maximum duration	 226.6 (169) at 2200 rpm 5 minutes 226.6 (169) at 2200 rpm unlimited	 226.6 (169) at 2200 rpm 5 minutes 226.6 (169) at 2200 rpm unlimited
FUEL (See NOTE 4 and NOTE 13)	JET-A1 (F-35) JET-A1 (ASTM D1655) JET-A (ASTM D1655) TS-1 (GOST 10227) Use of anti-icing additive for fuel temperature <0 degrees Celsius	JET-A1 (F-35) JET-A1 (ASTM D1655) JET-A (ASTM D1655) TS-1 (GOST 10227) JP8 (MIL-DTL-83133) JET-A1 (GOST R 52050-2006) No. 3 Jet Fuel (GB 6537-2006) Use of anti-icing additive for fuel temperature <0 degrees Celsius
OIL (See NOTE 4 and NOTE 12)	1. Type: 100% synthetic a. Standard: ACEA E4 / API CF / MIL L 2104E b. Viscosity: 10W40 2. Oil sump capacity, Gallon (liters) Total capacity: 1.72 (6.5, 6.72 including filter)	1. Type: 100% synthetic a. Standard: ACEA E4 / API CF / MIL L 2104E b. Viscosity: 10W40 2. Oil sump capacity, Gallon (liters) Total capacity: 2.11 (8, 8.16 including filter)

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LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"
"---" INDICATES "DOES NOT APPLY"

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I. MODELS (cont.)	SR305-230	SR305-230E
PRINCIPAL DIMENSIONS		
Length, in (mm)	32.3 (820)	32.8 (834)
Width, in (mm)	36.6 (930)	36.7 (931)
Height, in (mm)	29.5 (750))	30.9 (784)
CENTER OF GRAVITY	Refer to applicable Engine Installation Manual.	
WEIGHT (dry)		
pounds (kg),	430 (195), Refer to applicable Engine Installation Manual for definition of engine dry weight	456 (207), Refer to applicable Engine Installation Manual for definition of engine dry weight
CONTROL SYSTEM	Single channel electronic engine control system with mechanical backup. The S/W of the engine control system has been developed and tested iaw DO178B, Level C.	

	SR305-230	SR305-230E
CERTIFICATION BASIS	FAR 21.29 and FAR 33, effective February 1, 1965, and Amendments 33-1 through Amendment 33-18	FAR 21.29 and FAR 33, effective February 1, 1965, and Amendments 33-1 through Amendment 33-30
Model	SR305-230	SR305-230E
Effective Date of TC Application	September 13, 1999	May 21, 2010
Type Certificate Number	E00067EN	E00067EN
Issue Date	July 8, 2002	July 8, 2002
Date Model Added to TC	July 8, 2002	March 31, 2011
	Direction Generale de l'Aviation Civile (DGAC) originally type certificated this engine under its type certificate Number M23 The FAA validated this product under U.S. Type Certificate Number E00067EN. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of France. The EASA Type Certificate number is E.076.	European Aviation Safety Agency (EASA) originally type certificated this engine under its type certificate Number E.076 The FAA validated this product under U.S. Type Certificate Number E00067EN.
IMPORT REQUIREMENTS	To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States with DGAC or EASA airworthiness approval shall have a Joint Aviation Authorities (JAA) or EASA Form 1, Authorized Release Certificate. The JAA or EASA Form 1 should state that the engine conforms to the type design approved under the U.S. Type Certificate E00067EN, is in a condition for safe operation and has undergone a final operational check.	

NOTES		
	SR305-230	**SR305-230E**

NOTE 1. Rotation Speed Limits: Engine maximum speeds, rpm Steady State: Transient (3 seconds): Turbocharger maximum speed rpm:	 2200 2350 146,000	 2200 2350 135,000
NOTE 2. Temperature limits:	1. Maximum cylinder head temperature, deg F (C) : 392 (200) °C 2. Maximum intake air temperature (at intake manifold inlet) deg F(C): 149 (65) 3. Maximum exhaust gas temperature, deg F(C): 1346 (730) 4. Maximum oil temperature deg F (C): 248(120) 5. Minimum oil temperature for power up, deg F (C) : 149 (65) 6. Minimum oil temperature for starting, deg F (C): -4 (-20) 7. Maximum fuel temperature (at low pressure pump inlet), deg F(C): 149 (65) 8. Minimum fuel temperature without use of anti-ice additive, degs F(C): 32 (0). (see Note 13)	1. Maximum cylinder head temperature, deg F (C) : 392 (200) °C 2. Maximum intake air temperature (at intake manifold inlet) deg F(C): 149 (65) 3. Maximum exhaust gas temperature, deg F(C): 1454 (790) 4. Maximum oil temperature deg F (C): 248(120) 5. Minimum oil temperature for power up, deg F (C) : 149 (65) 6. Minimum oil temperature for starting, deg F (C): -4 (-20) 7. Maximum fuel temperature (at low pressure pump inlet), deg F(C): 149 (65) 8. Minimum fuel temperature without use of anti-ice additive, degs F(C): 32 (0). (see Note 13)
NOTE 3. Altitude (Standard Atmospheres)	Maximum altitude, ft (m): 12,500 (3810)	Maximum altitude, ft (m): 20,000 (6100)
NOTE 4. Fuel and Oil Pressure Limits, PSI (kPa)	1. Fuel: minimum absolute pressure (at low pressure pump inlet): 8.7 (60) 2. Oil (relative pressure): • Maximum, cold engine: 174 (1200) • Nominal: 46.4 to90 (320 to 620) • Minimum at idle: 14.5 (100)	1. Fuel: minimum absolute pressure (at low pressure pump inlet): 8.7 (60) 2. Oil (relative pressure): • Maximum, cold engine: 174 (1200) • Nominal: 60.9 to 90 (420 to 620) • Minimum at idle: 14.5 (100)
NOTE 5.	Not Used	
NOTE 6. Induction System (absolute pressure), PSI (kPa**),** at U.S Standard Atmosphere at Sea Level Pressure Altitude	Minimum in normal mode and maximum in mechanical backup mode 39.3 (271) Refer to the applicable Engine Operating Manual for other operating conditions	Minimum in normal mode and maximum in mechanical backup mode 37.7 (260) Refer to the applicable Engine Operating Manual for other operating conditions

NOTE 7. Aircraft Accessory Drive	**SR305-230 and SR305-230E**			
Accessory-Drive	Direction of Rotation (See Note 7a)	Rotation Speed (Rpm) (See Note 7b)	Maximum Torque In. lb. (Nm)	Drive
Propeller Governor	CCW	2708	212 (24)	AND 20010
Air Pump – SR305-230	CW	2589	93 (10.5)	AND 20000
Air Pump – SR305-230E	CW	3492	81 (9.2)	AND 20000
Alternator	CCW	2200 (see Note 7c)	N/A	Belt ISO 9982
A/C compressor or 2nd Alternator	CCW	2200 (see Note 7c)	N/A	Belt ISO 9982

Note 7a: CCW = counterclockwise. The rotation direction of the power drives for the accessories is indicated considering the power drive seen from the outside or from the front of the engine for accessories driven from the front pulley of the engine.
Note 7b: The speed of rotation for the accessory power drives is indicated for a reference engine speed of 2200 rpm.
Note 7c: Driving pulley speed. Accessory rotation speed depending on accessory pulleys ratio.

NOTE 8.	Oil Systems: Refer to the applicable Engine Installation Manual.		
NOTE 9.	Installation Assumptions: See applicable Engine Installation Manual.		
NOTE 10.	Electrical Equipment: Refer to applicable Engine Installation Manual.		
NOTE 11.	Time Limited Dispatch: The engines are not approved for Time Limited Dispatch.		
NOTE 12.	Approved Oils: Refer to the applicable Engine Operating Manual or Engine Maintenance Manual		
NOTE 13.	Approved fuel additives: Refer to the applicable Engine Operating Manual or Engine Maintenance Manual		
NOTE 14.	The FAA and EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the applicable Engine Maintenance Manual, Chapter 5, Airworthiness Limitations.		
NOTE 15.	SR305-230& SR305-230-1	SR305-230E Configuration MA01 (*)	SR305-230E Configuration C1 (*)
	Manuals required by FAR 33.4 and 33.5: Engine Installation Manual: TP230-EIM (DJC 01-01) Engine Operating Manual: TP230-OM (DJC 01-02) Engine Maintenance Manual:TP230-EMM (DJC 01-03) Engine Overhaul Manual: TP230-EOM (DJC 01-04) Engine Illustrated Parts Catalog: TP230-EIPC Service bulletins Each of the documents listed above must state that it is approved by the European Aviation Safety Agency (EASA) or – for approvals made before September 28, 2003 – by the DGAC. Any such documents are accepted by the FAA and are considered FAA approved.	Manuals required by FAR 33.4 and 33.5: Engine Installation Manual: TP230E-EIM (NT-CE 01-01) Engine Operating Manual: TP230E-OM (NT-CE 01-02) Engine Maintenance Manual:TP230E-EMM (NT-CE 01-03) Engine Overhaul Manual: TP230E-EOM (NT-CE 01-04) Engine Illustrated Parts Catalog: TP230E-EIPC (NT-CE 01-05) Service bulletins Each of the documents listed above must state that it is approved by the European Aviation Safety Agency (EASA). Any such documents are accepted by the FAA and are considered FAA approved.(*) The configuration identifies minor engine variations in relation with the aircraft application and is indicated on the engine data plate	Manuals required by FAR 33.4 and 33.5: Engine Installation Manual: TP230E—C1-EIM Engine Operating Manual: TP230E-C1-OM Engine Maintenance Manual:TP230E- C1-EMM Engine Overhaul Manual: TP230E-EOM (NT-CE 01-04) Engine Illustrated Parts Catalog: TP230E- C1-EIPC Service bulletins Each of the documents listed above must state that it is approved by the European Aviation Safety Agency (EASA). Any such documents are accepted by the FAA and are considered FAA approved. (*) The configuration identifies minor engine variations in relation with the aircraft application and is indicated on the engine data plate
NOTE 16.	Removed at Revision: 6		
NOTE 17.	The engine is approved for installation in Normal and Utility aircraft categories only.		
NOTE 18.	The electronic control unit must not be installed in a dedicated fire zone. The installation conditions are defined in the applicable Engine Installation Manual.		

NOTE 19.	The software of the ECU has been validated according to DO 178 B, level C.
NOTE 20.	The operating/starting envelope is provided in the applicable Engine Installation Manual.
NOTE 21.	A suffix may be added to the SR305-230 basic engine model number on the engine nameplate to identify minor variations in the engine configuration, installation components, or differences peculiar to aircraft requirements as follows: 1. SR305-230-1 – Same as the SR305-230 except the SR305-230-1 incorporate modifications that increase the EMI/lightning protection levels. (See note 22 for levels). The -1 suffix may also be added to existing engines by incorporation of SMA SB SB-01-76-002. The -1 configuration level is required for U.S. Installations. 2. SR305-230E has the same level of EMI/lightning protection as the SR305-230-1 3. A Configuration may be added to the SR305-230E data plate with C1 appearing in the "Configuration" data field to identify a modified starter gear to the Cessna C182 aircraft. 4. A Configuration may be added to the SR305-230E data plate with –MA01 to identify a certificated baseline with minor engine variations in relation to the aircraft application.
NOTE 22.	EMI/Lightning: The protection of the engine electronic control system against lightning and electromagnetic interference has been tested in accordance with DO 160D. The levels of protection are defined in the applicable Engine Installation Manual.
NOTE 23.	The SR305-230 engine model was initially certified with a 2 blade constant speed propeller of 3.5 kg-m^2 moment of inertia and 35 kg weight. The list of propellers that are approved for use with the engine is published in the applicable Engine Installation Manual.

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