



SERVICE INSTRUCTION

Oil Pressure Sensors for ROTAX® Engine Type 912 and 914 Series

ATA System: 79-20-00 Oil pump assy.

1) Planning information

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with prevailing legal regulations.

BRP-Rotax GmbH & Co KG cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

1.1) Applicability

The most recent oil pressure sensor part no. 456180 has been already installed on the following engines:

Engine type	Serial number
912 A	from S/N 4410959
912 F	from S/N 4413009
912 S	from S/N 4924446
912 UL	from S/N 6770766
912 ULS	from S/N 6780435
914 F	from S/N 4421150
914 UL	from S/N 7682317

1.2) Concurrent ASB/SB/SI and SL

SI-912-020 / SI-914-022, latest revision – Running modifications on ROTAX® Engine Type 912/ 914 (Series).

1.3) Reason

During the development and standardization of ROTAX® 912 / 914 Series engines, several “Generations” of oil pressure sensors have been introduced. The most recent sensor (part no. 456180) utilizes M10x1.0 mounting threads and a sealing gasket ring, allowing the sensor to seat directly against the oil pump housing (see Fig. 1 in section 4, Appendix). This attachment method reduces vibrations and moment of inertia transferred to the sensor, improving its durability.

Previous generation oil pressure sensors utilize 1/8-27 NPT (National Pipe Thread) mounting threads. When replacing a previous generation oil pressure sensor (part no. 956413 or 956357) with the newest sensor (part no. 456180), pay attention to the oil pump housing thread type, reworking or replacement of the oil pump housing may be necessary.

1.4) Subject

Oil pressure sensors for ROTAX® Engine Type 912 and 914 Series.

1.5) Compliance

NONE - For Information Only.

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1.6) Approval

The technical content of this document is approved under the authority of DOA ref.
EASA.21J.048.

1.7) Labor time and credit

Estimated labor hours:

Engine installed in the aircraft - - - labor time will depend on airframe installation and therefore no estimate is available from the engine manufacturer.

1.8) Mass data

change of weight - - - none.

moment of inertia - - - unaffected.

1.9) Electrical load data

No change.

1.10) Software modifications

No change.

1.11) References

In addition to this technical information refer to current issue of

- Illustrated Parts Catalog (IPC)
- Installation Manual (IM)
- Maintenance Manual Heavy (MMH)

NOTE: The status of the Manuals can be determined by checking the table of amendments. The 1st column of this table shows the revision status. Compare this number to the one listed on the ROTAX website:
www.flyrotax.com. Updates and current revisions can be downloaded for free.

1.12) Other Publications affected

None.

1.13) Interchangeability of parts

All parts are interchangeable.

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2) Material Information

2.1) Material

Price and availability will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers.

2.2) Company support information

None.

2.3) Material requirement and credit per engine

Parts requirement:

New part no.	Qty/ engine	Description	Application
956413	1	Oil pressure sensor 1/8 - 27NPT	Engine
956355**	1	Pressure sensor assy.	Engine
956357**	1	Pressure sensor assy.	Engine
456180	1	Oil pressure sensor M10x1	Engine
881302	1	Connector set OPS and MAPS	Oil pressure sensor
864250	1	Oil pressure wire assy.	Oil pressure sensor
911815	1	Oil pump housing assy. *	Oil pump
686250***	1	Oil pump housing with sensor	Oil pump
*	Optionally, oil pump housing assy. part no. 911809 can be reworked.		
**	The oil pressure sensor can no longer be supplied and has been replaced by part no. 456180 oil pressure sensor.		
***	Oil pump body with mounted sensor for easy retrofit if a rework of the oil pump housing is necessary.		

2.4) Material requirement and credit per spare part

None.

2.5) Rework of parts

None.

2.6) Special tooling/lubricants- /adhesives- /sealing compounds

part no.	Description	Application
897651	LOCTITE 243	Pressure sensor thread
-	Thread tap - M10x1.0*	Rework of oil pump housing 911809
-	Crimp tool Delphi (manufacturer no. 12155975)	Connector set OPS and MAPS assy.
*Optionally, oil pump housing assy. part no. 911809 can be reworked.		

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3) Accomplishment/Instructions

- ROTAX® reserves the right to make any amendments to existing documents, which might become necessary due to this standardization, at the time of next revision or issue.

NOTE: Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

Accomplishment

All measures must be implemented and confirmed by at least one of the following persons or organizations:

- ROTAX® - Authorized Distributors or their independent Service Centers
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT, Level Heavy Maintenance) are entitled to carry out this work.

NOTE: All work has to be performed in accordance with the relevant Maintenance Manual.

Safety notice



WARNING

Identifies an instruction which, if not followed, may cause serious injury or even fatal injury.



CAUTION

Identifies an instruction which, if not followed, may cause minor or moderate injury.

NOTICE

Identifies an instruction which, if not followed, may severely damage the engine or could void any warranty.

ENVIRONMENTAL NOTE

Environmental notes give you tips on environmental protection.

NOTE: Indicates supplementary information which may be needed to fully complete or understand an instruction.

3.1) Installation - related information

For further information see the current Installation Manual of the respective engine type.

NOTE: In contrary to the oil pressure sensor offered e.g. in 1st and 2nd generation, which was providing the signal on the basis of a sensor resistance variation, the new oil pressure sensor operates on basis of a current variation. This has to be taken into account for the selection of the appropriate cockpit instrument.

3.2) Maintenance (Heavy) - related information

3.2.1) Engines equipped with oil pump housing part no. 911810 or part no. 911815

Oil pump housings part no. 911810 and part no. 911815 are supplied with M10x1.0 oil pressure sensor attachment threads.

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Oil pressure sensor part no. 456180:

New oil pressure sensor part no. 456180 has matching M10x1.0 attachment threads.

Step	Procedure
1	Install sensor part no. 854180 with LOCTITE 243. Tightening torque 15 Nm (132 in.lb).

Oil pressure sensor part no. 956413:

Previous types of oil pressure sensors have 1/8-27 NPT threads (tapered pipe thread). However, the use of pressure sensor part no. 956413 is allowed with oil pump housing part no. 911810 or part no. 911815.

Step	Procedure
1	Install sensor part no. 956413 with LOCTITE 243. Tightening torque 15 Nm (132 in.lb).

3.2.2) Engines equipped with oil pump housing part no. 911809

Oil pump housings part no. 911810 and part no. 911815 are supplied with M10x1.0 oil pressure sensor attachment threads.

Oil pressure sensor part no. 956413:

Oil pressure sensor part no. 956413 has matching 1/8-27 NPT attachment threads.

Step	Procedure
1	Install sensor part no. 956413 with LOCTITE 243. Tightening torque 15 Nm (132 in.lb).

Oil pressure sensor part no. 456180:

New oil pressure sensor part no. 456180 cannot be installed with oil pump housing part no. 911809. Oil pump housing must be replaced, or the threads must be reworked.

Option A: Replace oil pump housing

Step	Procedure
1	Remove the oil pump housing in accordance with the relevant Maintenance Manual (Heavy).
2	Replace oil pump housing with part no. 911815 in accordance with the relevant Maintenance Manual (Heavy).
3	Install sensor part no. 456180 with LOCTITE 243. Tightening torque 15 Nm (132 in.lb).

NOTE: For this purpose and replacement we can offer an OIL PUMP HOUSING WITH SENSOR part no. 686250 which includes the oil pump housing, O-rings, oil pressure sensor and oil pressure sensor wire assy.

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Option B: Rework of the oil pump housing

Step	Procedure
1	Remove the oil pump housing in accordance with the relevant Maintenance Manual (Heavy).
2	Rework pressure sender attachment threads with M10x1 thread tap.

NOTICE

Clean the threads and oil pump housing completely from swarf.

Step	Procedure
3	Install the reworked oil pump housing in accordance with the relevant Maintenance Manual (Heavy).
4	Install sensor part no. 456180 with LOCTITE 243. Tightening torque 15 Nm (132 in.lb).

3.3) ROTAX® Flydat

NOTE: Depending on the elevation above sea level and ambient pressure, the display of the electric oil pressure sensor may show ~ 0.2 bar (3 psi) on the ground.

3.3.1) ROTAX® Flydat part no. 886858

- The ROTAX® Flydat part no. 886858 has already been prepared for the electric oil pressure sensor concerning its hardware and software.

NOTE: For more information, please contact an authorized distributor or Service Center for ROTAX® aircraft engines.

3.3.2) ROTAX® Flydat part no. 886857

- For the ROTAX® Flydat part no. 886857 a retrofit kit for the electric oil pressure sensor is offered.

NOTE: For more information, please contact an authorized distributor or Service Center for ROTAX® aircraft engines.

3.3.3) Old models of ROTAX® Flydat

- For older ROTAX® Flydat models as e.g. part no. 886856/886855 a retrofit is not possible.

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3.4) Test run

Conduct engine test run including leakage check. See Chapter 12-20-00 of the latest Maintenance Manual Line for the respective engine type.

3.5) Summary

These instructions (section 3) have to be followed in accordance with the deadlines specified in section 1.5.

The execution of the Service Instruction must be confirmed in the logbook.

 A revision bar outside of the page margin indicates a change to text or graphic.

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX' scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

3.6) Inquiries

Inquiries regarding this Service Instruction should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on www.flyrotax.com.

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4) Appendix

The following drawings should convey additional information:

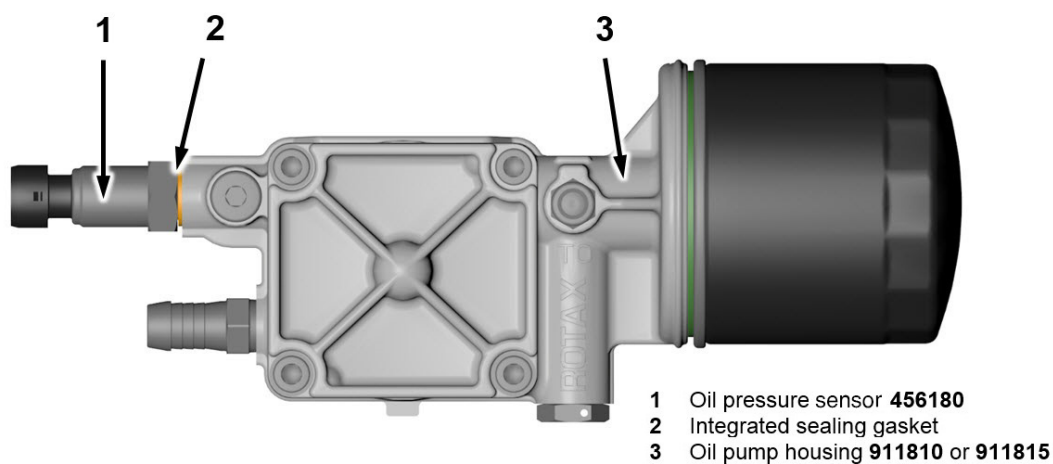


Fig. 1

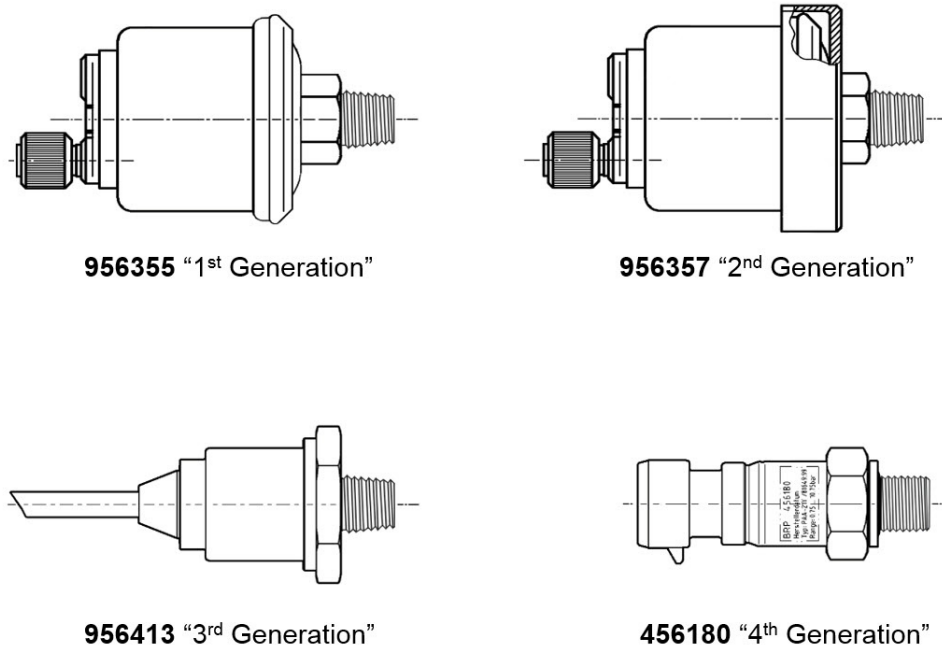
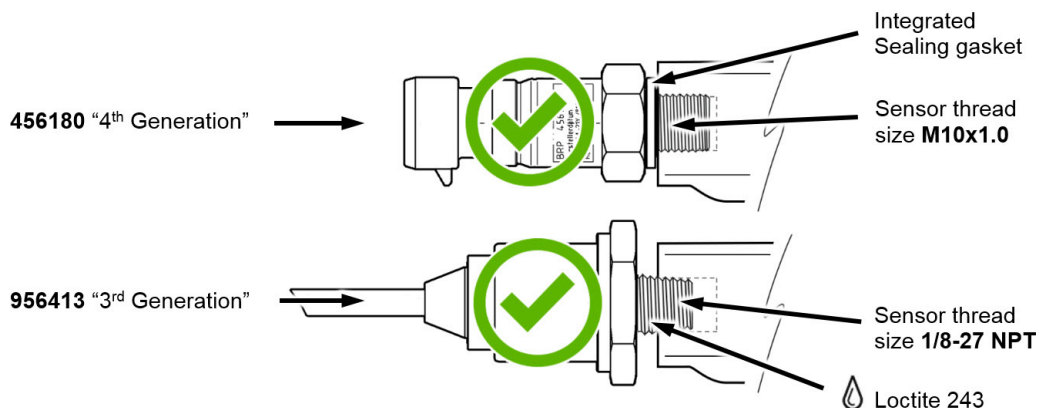


Fig. 2

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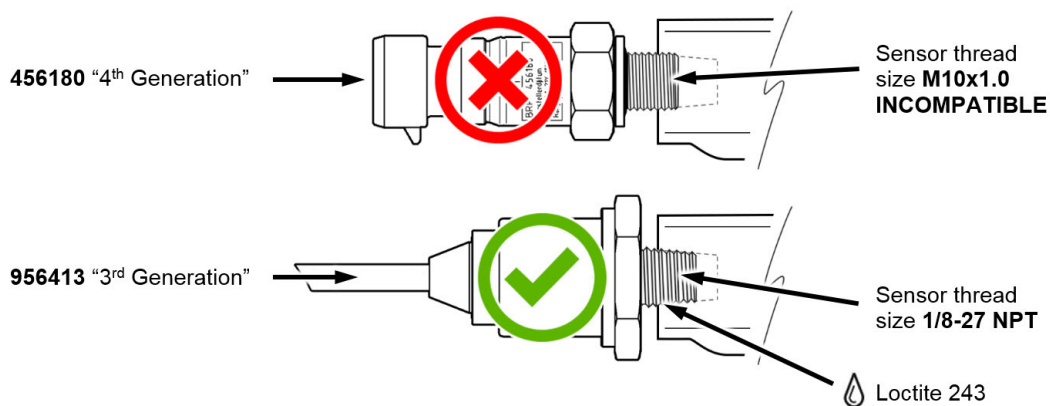
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Oil pump housing Part no. **911810 / 911815**
M10x1.0 straight threads

10330

Fig. 3

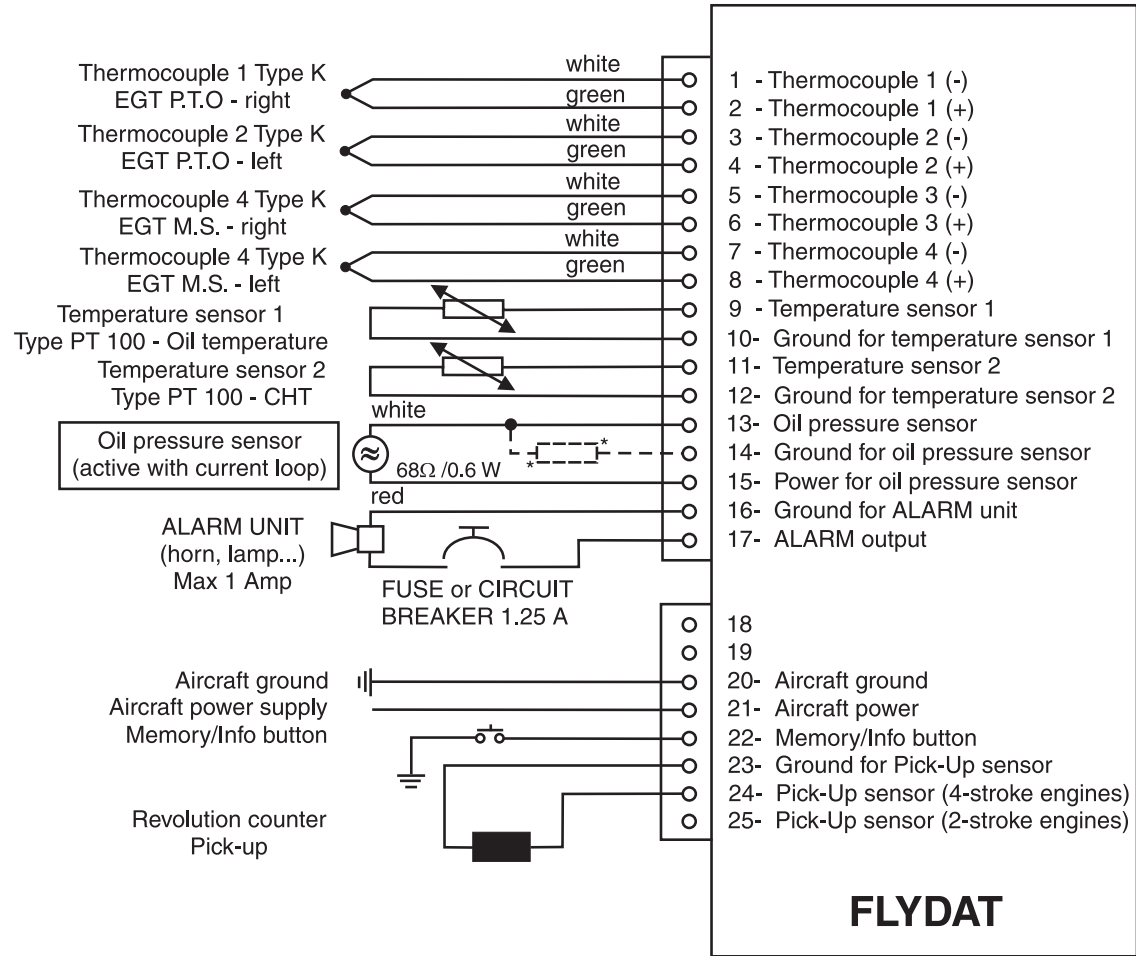


Oil pump housing Part no. **911809**
1/8-27 NPT tapered threads

10331

Fig. 4

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* resistor is part of the retrofit kit for Flydat part no. 886857. See also 1.3.2.

Fig. 5

NOTE: The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function.

Exploded views are **not technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.