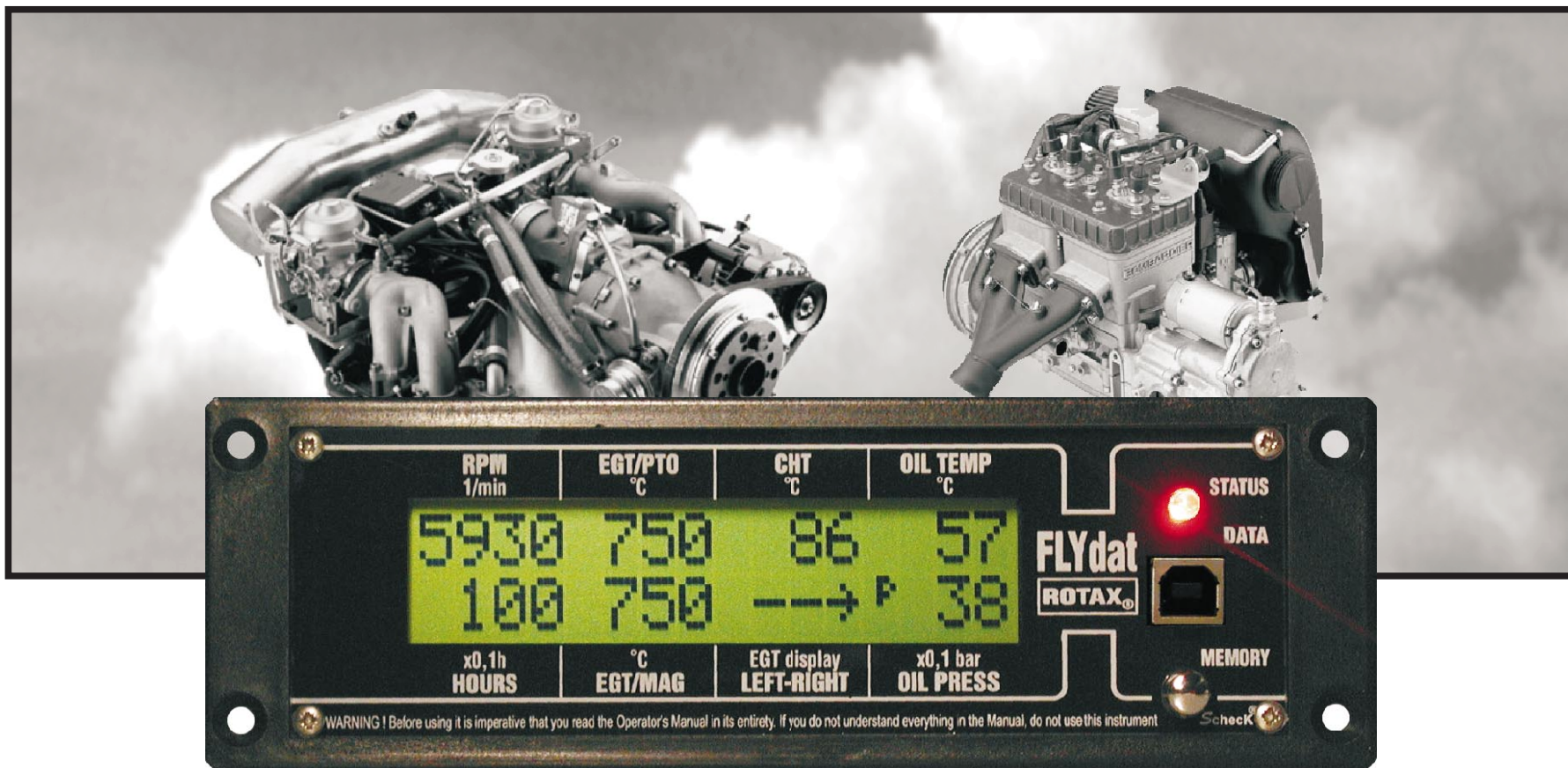




FLYDAT OPERATOR'S MANUAL

ROTAX®
AIRCRAFT ENGINES

Flydat operator's manual
Non TSO approved

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Dear Customer

Section

1

Congratulations to your decision to use the FLYdat, which is developed specially for ROTAX Aircraft Engines to indicate and store engine operation data.. Prior to taking the **FLYdat** into service, please, read the Operator's Manual carefully, as it will acquaint you with the basics of technical data, installation and safe handling of the **FLYdat**.

Please do not hesitate to contact your nearest authorised ROTAX distributor or service partner with any further questions or queries.

INTRODUCTION

Thanks

ROTAX®

Introduction

BRP-ROTAX G.m.b.H & Co.Kg
Aircraft engines division
A-4623, Gunskirchen, Austria

Web side address: <http://www.rotax-aircraft-engines.com>

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All the information in this User's manual is subject to change without a prior notice.

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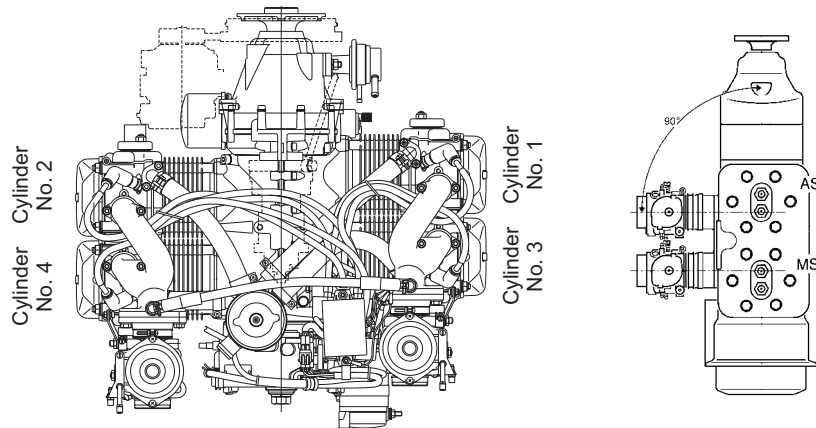
Description

Section 2

The **FLYdat** has not undergone any safety and durability examination to the Standards of Civil Aviation, but it does incorporate the latest technical development and has been thoroughly tested.

Despite the **FLYdat** being a precise instrument, false indication or misinterpreting of data could occur. By utilizing the **FLYdat**, the user acknowledges a possible danger and responsibility for all risk.

To minimise any possibility of risk, we advise that you study the Operator's Manual carefully. Do not operate the **FLYdat** without the full knowledge and understanding of this manual.



INTRODUCTION Description

ROTAX®

Please, pay attention to the following symbols throughout the manual, emphasizing particular information.

- ▲ **WARNING:** Identifies an instruction, that, if not followed, may cause serious injury or even death.
- **ATTENTION:** Identifies an instruction that, if not followed, may severely damage the engine or other components.
- ◆ **NOTE:** Useful information for better handling of the **FLYdat**

P.T.O. stands for power take off side and M.S. for magneto side throughout the Technical Documentation of Rotax, for precise destination of location

Description of design

Section

3

The **FLYdat** represents an instrument developed specially for ROTAX Aircraft engines. It indicates and displays engine operating data, that are readily accessible to the pilot. The operating data is being permanently checked with the specific engine operating limits.

The **FLYdat** is furnished with 8 sensor input ports, which can be occupied variably according to the engine type.

The operating data is being permanently checked with the specific engine operating limit. If the signalled operating data exceeds the stored operating limit, the **FLYdat** will warn the pilot.

The **FLYdat** keeps informing the pilot about the following actual readings:

- Engine speed
- Cylinder head temperature
- Ambient air temperature (not on engines 912/914)
- Temperature of cooling water (only on engines 582UL, 618UL)
- Oil temperature and oil pressure (only on engines 912/914)

Besides the topical data, the **FLYdat** shows also the hours of operation.

INTRODUCTION

Description

ROTAX®

The readings picked up separately are issued in accordance to display allocation.

For maintenance and analysis of engine shortcomings, the **FLYdat** gathers and stores the essential operating data. For the safety's sake, the programmed service date reminds you of the scheduled maintenance of the engine.

The handy unit offers a number of appreciable assets compared to the conventional dial gauge indication. Besides the easy installation, the low weight and compact size are the essential advantages of the **FLYdat**.

Possible configuration

Section

4 The **FLYdat** is supplied by Rotax with an undefined configuration.

With the standard configuration, all trigger levels for the warning and alarm system are set to the **maximum of the measuring range**, i.e. no checks for exceeding the warning limits.

The **FLYdat** can be coordinated by the authorized Rotax Distributor with the respective engine type.

With this configuration, Warning and Alarm limits are set for the specific channels.

- Undefined
- 447 UL SCDI
- 503 UL DCDI
- 582 UL DCDI
- 618 UL DCDI
- 912 DCDI series
- 912S DCDI series
- 914 DCDI series

INTRODUCTION

Configuration

ROTAX®

The **FLYdat's** configuration ensures the correct engine type, engine number, hours of operation, temperature unit and the respective engine limits are programmed.

◆ **NOTE:** If the **FLYdat** is utilized on a used engine, it is possible to set the time of operation

▲ **WARNING:** If using the **FLYdat** with the undefined configuration, the indication will work correctly, but as Warning and Alarm limits are set to a high level, there is no warning in case of danger.

Liquid cooled 2-stroke

FLYdat is always delivered with the front plate for 4-stroke engines but without a defined configuration. By programming the **FLYdat**, it will be adapted to the respective engine type.

2-stroke liquid cooled engine configuration:



00998

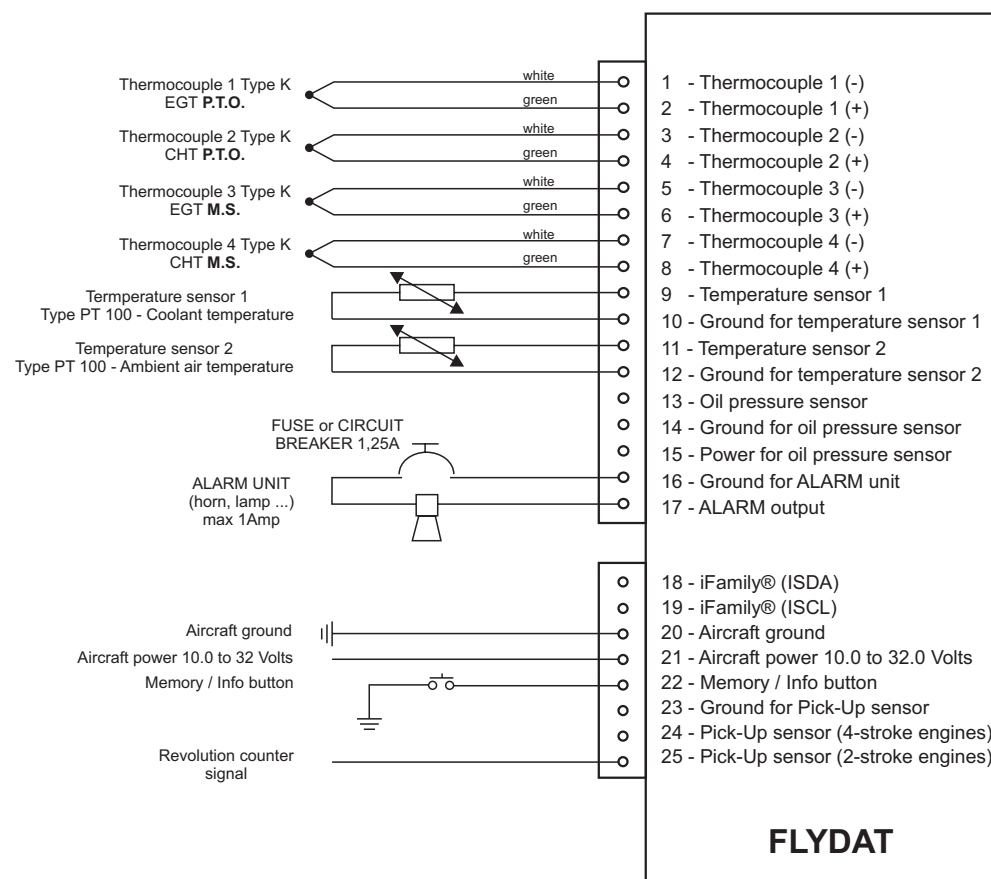
Display field	Designation	Unit	Resolution
1	Engine speed	rpm	1
2	Hours of operation	h	0,1
3	Exhaust gas temp. PTO	°C or °F	1 or 10
4	Exhaust gas temp. MS	°C or °F	1 or 10
5	Cylinder head temp. PTO	°C or °F	1
6	Cylinder head temp. MS	°C or °F	1
7	Coolant temperature	°C or °F	1
8	Ambient air temperature	°C or °F	1

CONFIGURATION

Display and connection

ROTAX®

Wiring diagram:



Air cooled 2-stroke

FLYdat is always delivered with the front plate for 4-stroke engines but without a defined configuration. By programming the **FLYdat**, it will be adapted to the respective engine type.

2-stroke air cooled engine configuration:



00999

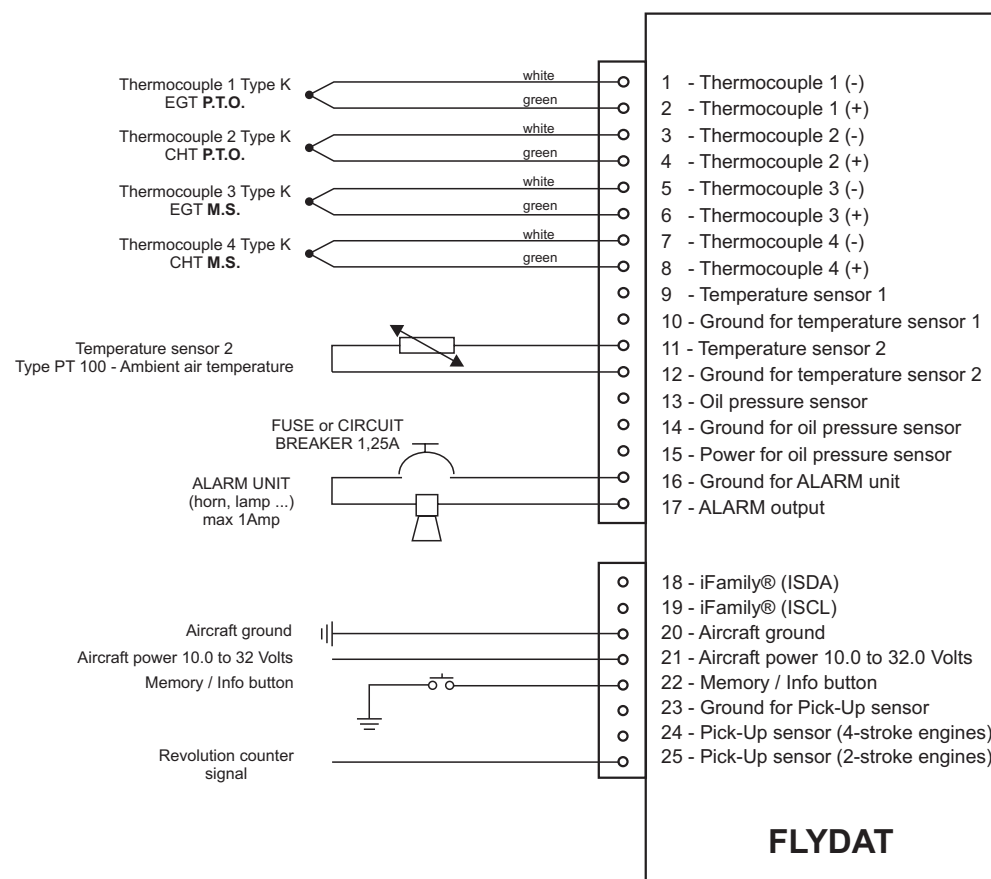
Display field	Designation	Unit	Resolution
1	Engine speed	rpm	1
2	Hours of operation	h	0,1
3	Exhaust gas temp. PTO	°C or °F	1 or 10
4	Exhaust gas temp. MS	°C or °F	1 or 10
5	Cylinder head temp. PTO	°C or °F	1
6	Cylinder head temp. MS	°C or °F	1
7	empty		
8	Ambient air temperature	°C or °F	1

CONFIGURATION

Display and connection

ROTAX®

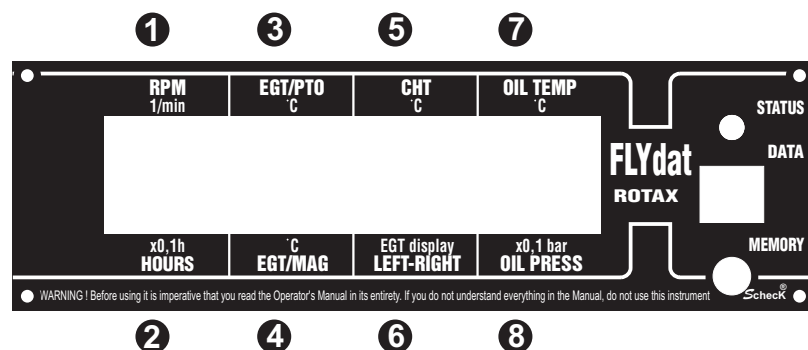
Wiring diagram:



Liquid cooled 4-stroke

FLYdat is always delivered with the front plate for 4-stroke engines but without a defined configuration. By programming the **FLYdat**, it will be adapted to the respective engine type.

4-stroke liquid cooled engine configuration:



Display field	Designation	Unit	Resolution
1	Engine speed	rpm	1
2	Hours of operation	h	0,1
3	Exhaust gas temp. AS	°C or °F	1 or 10
4	Exhaust gas temp. MS	°C or °F	1 or 10
5	Cylinder head temp	°C or °F	1
6	< - - - >		
7	Oil temeperature	°C or °F	1
8	Oil pressure	bar or PSI	0,1

◆ **NOTE:** Arrow ← denotes left line of cylinder
 Arrow → denotes right line of cylinder

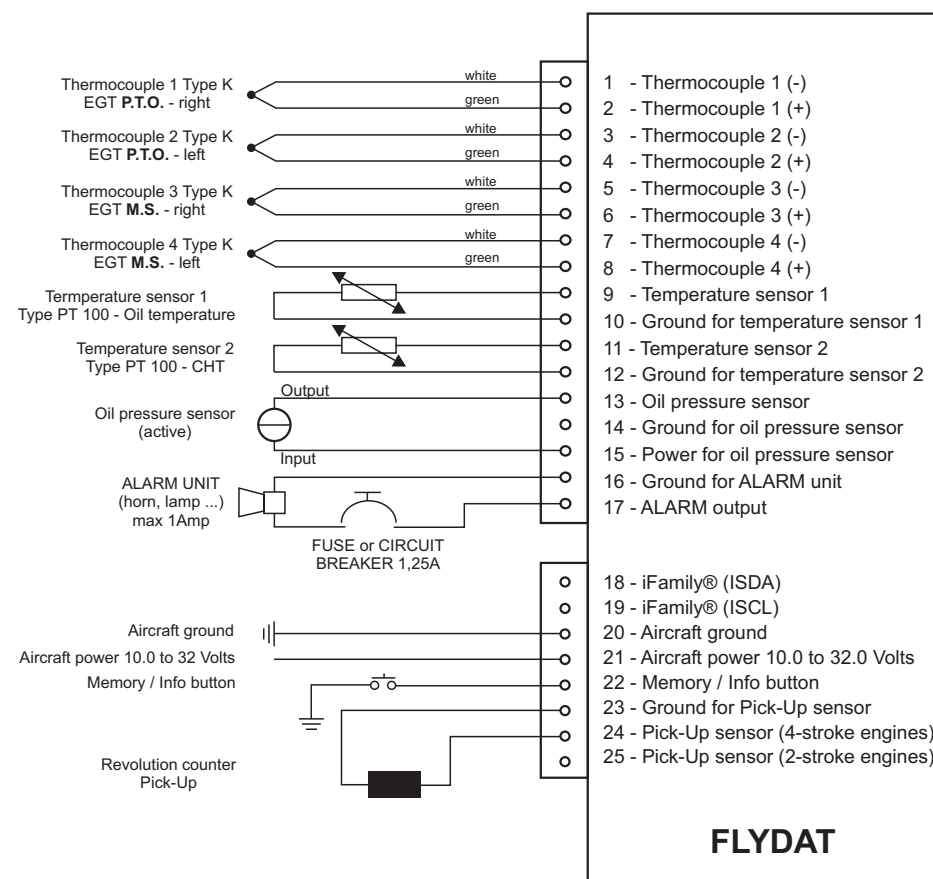
The change over of the readings of exhaust gas temperature is every 5 seconds.

CONFIGURATION

Display and connection

ROTAX®

Wiring diagram:



Possible connection

Section

5

The **FLYdat** has a different input that should be used for programming, communication with other instruments via the iFamily® bus and also for the external switch and signalization unit.

Communication with the PC:

The socket fitted on the front panel is used for programming to various engines or data transfer to the PC.

The socket enables the data transfer to the PC via standard USB communication.

It is possible to connect the **FLYdat** to a PC that has USB1.1 as well as USB 2.0.

In terms of communication the **FLYdat** is supplied through the USB port, therefore it does not need any external power supply.

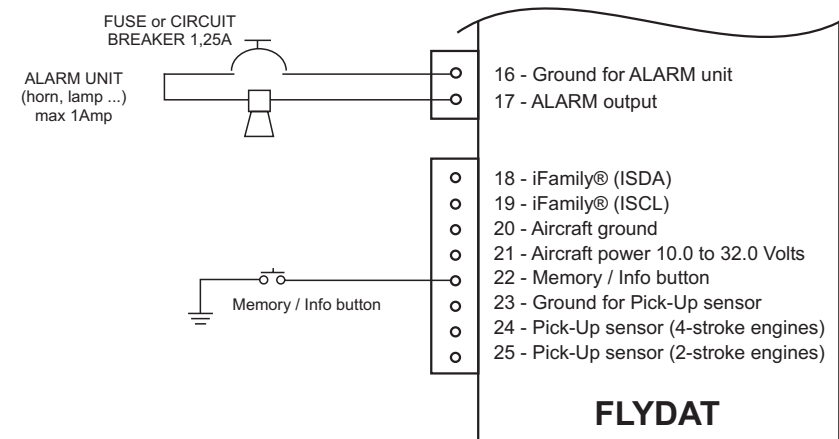
CONFIGURATION

Display and connection

ROTAX®

Alarm lamp and external Push-Button:

When the Push Button on the front panel is out of hand reach, connect the external Push Button into the connector. The **FLYdat** is furnished with an alarm output, which behaves like the position (+) terminal of 12Volts output. If necessary, a lamp and/or some signalling device, acoustic or visual, may be connected.



◆ **NOTE:** The maximum current of alarm output must not exceed 1Amps and the Fuse or the Circuit Breaker 1,25A is required.

Technical Data

Section

6

For correct operation of the **FLYdat**, always keep the technical parameters as specified below. Any use of the **FLYdat** beyond the range of the technical parameters may cause a damage, to which the guarantee will not be related.

If you use the **FLYdat** above the temperature limits, the warning message "OVER RANGE" will show on the display together with the temperature the **FLYdat** has just measured.

The **FLYdat** will store this information. In this case, turn the **FLYdat** off in order to prevent its damage.

General parameters:

FLYDAT	
Power supply:	10,0 to 32,0 Volts
Current consumption:	0,25 Amp@14Volts (without signalisation)
Alarm Output	1 Amp max. (voltage output in compliance with power supply)
Operating temperature:	-20°C to 70°C (-4°F to 158°F)
Storage temperature:	-30°C to 85°C (-22°F to 185°F)
Relative humidity:	95% without condensating
Load:	+/- 20g
Vibration:	1 to 200 Hz
Weight:	ca 0,5kg (1lbs)
Display:	LCD with green background illumination 2 x 16 digits, size of type 8 mm
Fuse:	3A, 32 Volts
Design:	Plastic injection molded housing with plexiglass front plate, easy to change

TECHNICAL DATA

Technical data

ROTAX®

Sensors inputs:

4 x input for thermo couple NiCrNi (type K)	
Measuring range:	-40°C to +1050°C by environmental temperature 25°C
Accuracy:	+/- 5°C
Application:	Exhaust gas temperature (EGT), cylinder head temperature (CHT)
2 x input resistance thermometer (PT-100)	
Measuring range:	-20°C to +270°C
Accuracy:	+/- 2°C
Application:	Air temp., coolant temperature (2-stroke) Oil temp., cylinder head temp. (912/914)
1 x input oil pressure pick-up	
Measuring range:	0 to 10 bar
Accuracy:	+/- 0,2 bar
Application:	Oil pressure (912/914)
1 x RPM input	
Measuring range:	500 to 9990 rpm
Accuracy:	+/- 10 rpm
Hour meter	
Indicating range:	0,0 to 999,9 h (after 999,9 h change to zero)
Accuracy:	+/- 1 sec/h at operation without interruption

Warning and Alarm

Section

7

If the **FLYdat** has been configured by a distributor, the following limits are stored.

◆ **NOTE:** Please, pay attention to the limits as specified in the Operator's manual for the engine.

Do not run the engine above these limits.

Engine type 447 and 503UL:

Display field	Unit	Warn limit	Alarm limit
Engine speed	rpm	6800	7000
Exhaust gas temp.	°C	650	680
Cylinder head temp.	°C	250	275
Ambient air tepmperature	°C	40	50

LIMITS

Warning and Alarm

ROTAX®

Engine type 582 UL DCDI:

Display field	Unit	Warn limit	Alarm limit
Engine speed	rpm	6800	7000
Exhaust gas temp.	°C	650	680
Cylinder head temp.	°C	165	180
Coolant temperature	°C	85	95
Ambient air tepmperature	°C	40	50

Warning and Alarm

If the **FLYdat** has been configured by a distributor, the following limits are stored.

◆ **NOTE:** Please, pay attention to the limits as specified in the Operator's manual for the engine.

Do not run the engine above these limits

Engine type 618 UL:

Display field	Unit	Warn limit	Alarm limit
Engine speed	rpm	7000	7300
Exhaust gas temp.	°C	650	680
Cylinder head temp.	°C	165	180
Coolant temperature	°C	85	95
Ambient air temperature	°C	40	50

LIMITS

Warning and Alarm

ROTAX®

Engine type 912 UL DCDI:

Display field	Unit	Warn limit	Alarm limit
Engine speed	rpm	5800	6000
Exhaust gas temp.	°C	880	900
Cylinder head temp.	°C	150	160
Oil temperature	°C	140	150
Oil pressure max.	bar	6,0	8,0
Oil pressure min.	bar	2,0	1,0

Warning and Alarm

If the *FLYdat* has been configured by a distributor, the following limits are stored.

◆ **NOTE:** Please, pay attention to the limits as specified in the Operator's manual for the engine.

Do not run the engine above these limits.

Engine type 912 ULS DCDI:

Display field	Unit	Warn limit	Alarm limit
Engine speed	rpm	5800	6000
Exhaust gas temp.	°C	880	900
Cylinder head temp.	°C	135	145
Oil temperature	°C	130	140
Oil pressure max.	bar	6,0	8,0
Oil pressure min.	bar	2,0	1,0

LIMITS

Warning and Alarm

ROTAX®

Engine type 914 UL DCDI:

Display field	Unit	Warn limit	Alarm limit
Engine speed	rpm	5800	6000
Exhaust gas temp.	°C	950	1000
Cylinder head temp.	°C	135	150
Oil temperature	°C	130	145
Oil pressure max.	bar	6,0	8,0
Oil pressure min.	bar	2,0	1,0

Installation

Section

8

Prior to the installation of the **FLYdat**, look for a suitable location in the cockpit, taking the following into consideration:

⇒ Protection against too high temperatures.

◆ **NOTE:** For trouble free usage please note the max. operating temperature is 70°C.

⇒ Protection against excessive vibrations and shock loads (see Technical Data for permissible values). For certain conditions, it might be necessary to install the vibration damper for keeping within the specifications.

⇒ Protection against damp and any kind of gasoline and oil contamination.

⇒ Ensure clear and distinct visibility, direct and without glare.

⇒ Easy maintenance.

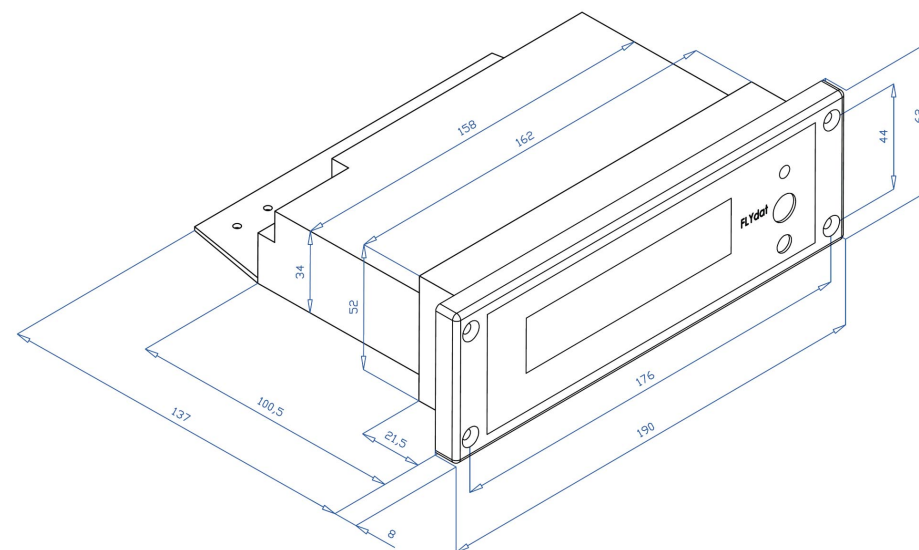
With regard to reliability and durability, try to meet all these conditions.

GENERAL INFORMATION

Installation

ROTAX®

Outline dimensions of the Flydat



Section

9

Sensors kits

3 different sensor kits, specially assembled for every engine type, are offered from Rotax.

Version LC (liquid cooled 2-stroke engines)

Version AC (air cooled 2-stroke engines)

- ⇒ 2 sensors for exhaust gas temperature (EGT)
- ⇒ 2 spark plug seat sensors for cylinder head temperature (CHT)
- ⇒ 2 temperature pick-ups for air and coolant temperature

(version AC with 1 air temperature sensor only)

- ⇒ 2 sealing rings for EGT sensors
- ⇒ 2 support angles for CHT sensors
- ⇒ 2 cable straps
- ⇒ 2 front plates alternatively with temperature display in °C or °F
- ⇒ 2 stickers with wiring diagram

Version 912, 912S or 914

- ⇒ 4 sensors for exhaust gas temperature (EGT)
- ⇒ 2 temperature pick-ups, for cylinder head and oil temperature
- ⇒ 1 pick-up for oil pressure
- ⇒ 4 sealing rings for EGT sensors
- ⇒ 4 welding collars M8x1 for EGT sensors
- ⇒ 1 front plate, alternatively with temperature display in °C or °F
- ⇒ 1 sticker with wiring diagram

GENERAL INFORMATION

Sensors kits

ROTAX®

Electric connections

The plug receptacles with interlocking for the connection of the sensors and power supply are located on the rear of the instrument.

For connecting the sensors and terminals, consult the wiring diagram.

◆ **NOTE:** Use the original connectors delivered with the *FLYdat*.

■ **ATTENTION:** Connect the cables into the connector and use the cable ties to tighten them to the connector cover. Secure the incoming leads to prevent their effect on the connector in the vertical direction.

Installation of the sensors

Section

10 At installation of the sensors, take the following into consideration:

- ⇒ Route sensor lines must be protected against excessive temperatures.
- ⇒ Route sensor lines must be free of vibrations, but with some flexibility.
- ⇒ Sensor lines must be without kinks and must not chafe.
- ⇒ The threads of the EGT sensors and pick-up of the coolant must be greased with Loctite ANTI-SEIZE to ensure a trouble-free removal (see the tightening torque chart).

Ignoring these points can result in false readings, interruption of lines or the damage to pick-up lines and sensors.

◆ **NOTE:** The sensors are furnished by the supplier with the pick-up lines of 2m (6.5 foot) length, but can be extended to the max. length of 4m (13.1 foot).

Thermocouples NiCrNi (type K) must be extended with NiCrNi thermocouple extension cable only.

Connections must be soldered and insulated, preferably by a shrink tube.

GENERAL INFORMATION

Sensors Installation

ROTAX®

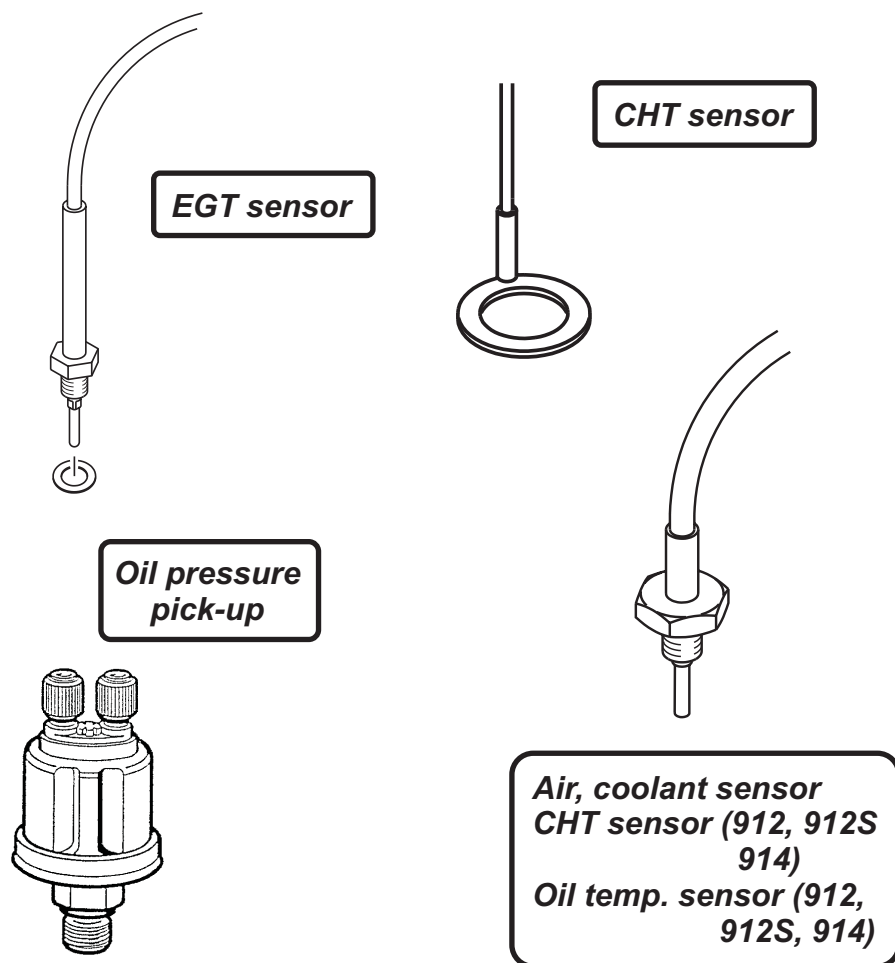
Never establish the connections by clamping, otherwise there is a danger of false readings due to the higher contact resistance. NiCrNi thermocouple cables are available in a specialist store or from your local Rotax dealer.

All other sensors can be extended with a suitable stranded copper wire.

■ **ATTENTION:** While installing the sensors, always bear in mind that you are dealing with measuring devices, and handle these sensitive components carefully. For any question, please contact your local Rotax distributor.

Installation of the sensors

These sensors are offered by Rotax:



GENERAL INFORMATION

Sensors Installation

ROTAX®

Tightening torques:

Sensor	Torque	Tightening
EGT sensor	20Nm 177in.lb.	LOCTITE Anti Seize
Oil pressure pick-up	15Nm 133in.lb.	LOCTITE 603
CHT sensor (912, 912S / 914)	15Nm 133in.lb.	LOCTITE 221
Oil temp. sensor (912, 912S / 914)	15Nm 133in.lb.	LOCTITE 603
Coolant temeptrature sensor	6Nm 53in.lb.	LOCTITE Anti Seize
Air temperature sensor	6Nm 53in.lb.	LOCTITE 221

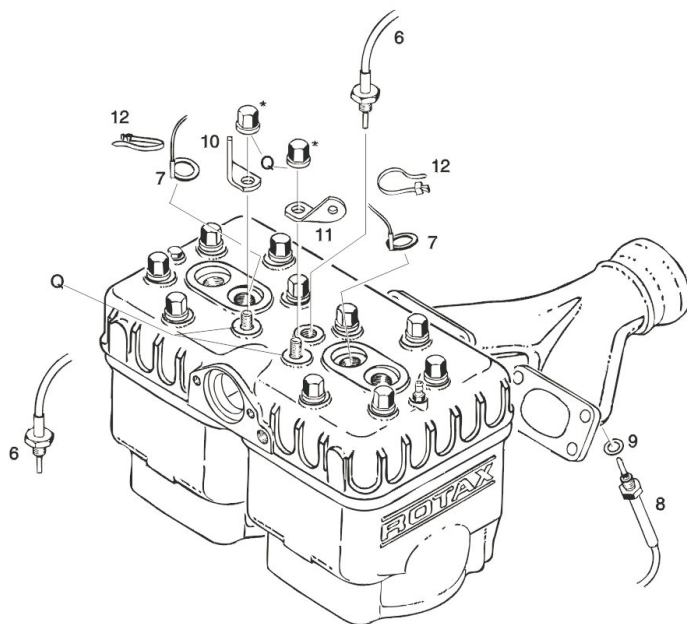
■ **ATTENTION:** All components, liable to come of during operation, have to be secured against loss !

Installation of the sensors

Installation plan for the individual sensor kits

liquid cooled 2-stroke engines

(Illustration shows the engine type 582 UL)



Index	Description
1	Sensor at spark plug seat (CHT)
2	Air temperature sensor
3	EGT sensor
4	Sealing ring

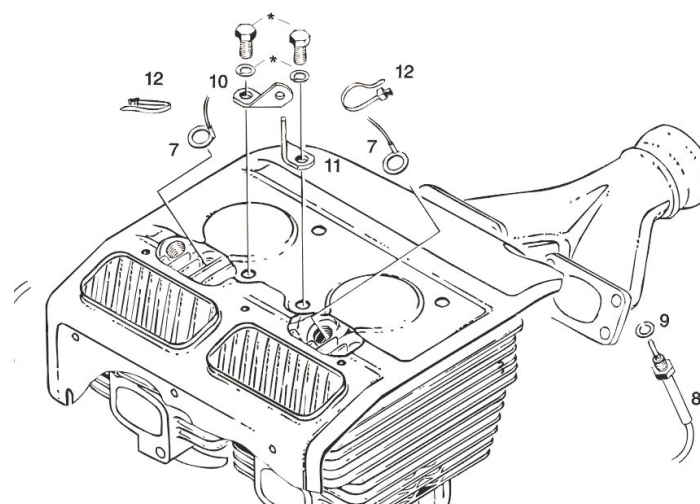
GENERAL INFORMATION

Sensors Installation

ROTAX®

Air cooled 2-stroke engines

(Illustration shows the engine type 503 UL)



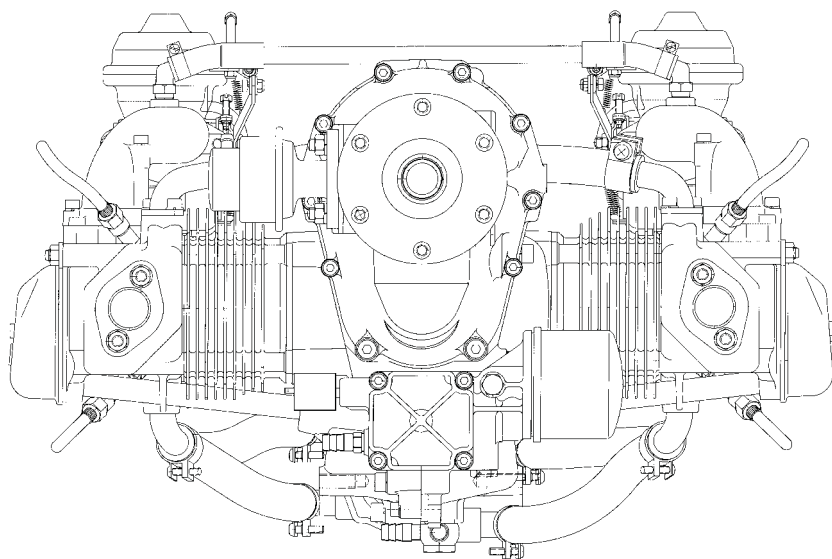
Index	Description
1	Sensor at spark plug seat (CHT)
2	Air and liquid temperature sensor
3	EGT sensor
4	Sealing ring

Installation of the sensors

Installation plan for the individual sensor kits

liquid cooled 4-stroke engines

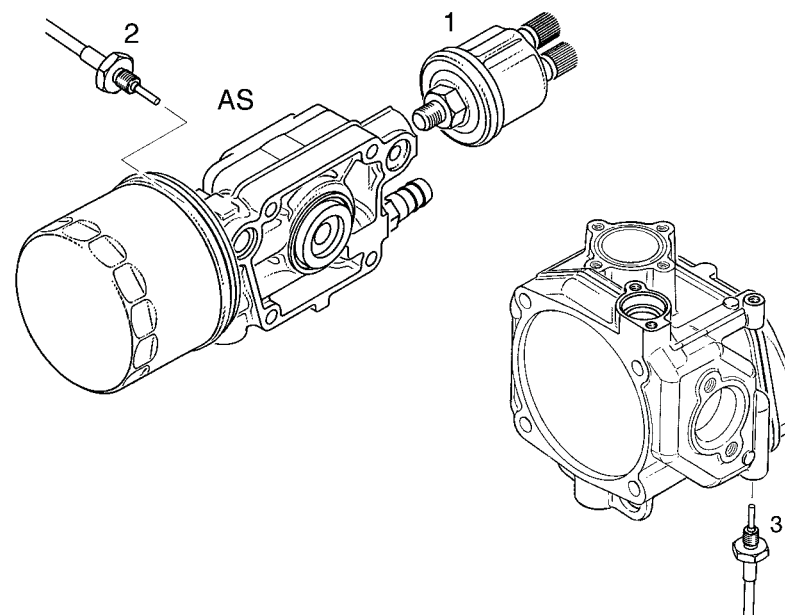
(Illustration shows the engine type 912 UL)



GENERAL INFORMATION

Sensors Installation

ROTAX®



Index	Description
1	Oil pressure pick-up
2	Oil temperature sensor
3	CHT sensor

Operation

Section

11 *Initial Start-up*

Prior to putting the **FLYdat** into operation, make sure that all the sensor lines and the supply cable are connected correctly. Consult the wiring diagram and the chapter about the electric connections for the particular type of the engine. Until all the connections are checked, do not supply the **FLYdat** with voltage.

With adequate voltage and correctly connected supply,

- ⇒ the background illumination must glow, and
- ⇒ the readings are indicated on the **FLYdat**.

If any of the temperature sensors or the pressure sensor (in a 4-stroke engine) are not connected, three dashes [---] will show on the display instead of the measured value.

OPERATION

Initial

ROTAX®

Reaction at start

After connecting the unit to the power, it will perform an autotest. With no errors detected, the logo shows on the display. First, the display will show the logo, then the date and time in UTC.

Then the firmware version and the units of temperature (°C/°F) and pressure (Bar/PSI) are shown. When showing the firmware version, the alarm output is activated for 1 second.

If the message "SERVICE" is shown after the date and time, it means that one of the measured quantities has been exceeded. After pushing the button on the panel or the external button connected to the pin 7 on the backside of the instrument, the **FLYdat** will show you which quantity was exceeded.

◆ **NOTE:** If the information on the date and time is incorrect or if there is "Err" instead of the month, it means that the internal battery does not have sufficient capacity. In this case, contact a service point, where the battery will be replaced.

Operation

Section

12 Delete "SERVICE" message

To delete this message, turn the instrument off. Then, while keeping the pressed button on the panel or the external button connected to the pin 7 of the connector on the rear of the instrument, turn the instrument on.

◆ **NOTE:** If this message is shown, we recommend downloading the data to your PC (see page 23) and undertaking the precautions that would prevent another warning message.

■ **ATTENTION:** Any engine operation beyond the limit values assessed by the company ROTAX may cause abating the engine durability.

OPERATION

Message and light

ROTAX®

Signalization unit

The signalling control lamp on the panel of the instrument shows three possible conditions of the **FLYdat**.

⇒ After turning the instrument on, while showing the firmware version, the red lamp control lights up for 1sec. As soon as the measured values are shown on the display, the lamp control turns off provided the engine is at a standstill. As soon as you start the engine and reach the oil operating temperature (in 4-stroke engines), the green lamp control lights up to inform you that the engine has reached the operating temperature.

⇒ If you press the button on the front panel or the external button connected to the pin 7 of the connector on the rear of the instrument, the memory of the maximum measured values will show. In this case, the control lamp keeps flashing in the interval of 0.5 second.

⇒ If some of the measured values were exceeded, the control lamp will light up red and will keep flashing in the interval of 0.5 second and simultaneously with the alarm output.

Possible display

Section

13 *Indication of engine speed*

There is a four digits r.p.m. reading on the display and shows on the display from 300 r.p.m. onwards. Recording of the speed down to 1000 r.p.m. ending with last input memory.

◆ **NOTE:** If the rotation speed exceeds the value of 9999r.p.m., three dashes [- - -] will show on the display.

Indication of operating time

There is a four digits number that shows the operating hours with resolution of 0,1 hour on the display.

As only 4 digits are at disposal, the time of operation is indicated up to 999,9 hours followed by 0,0 hours again.

Recording the time of operation is at the engine speed down to 1000 r.p.m.

◆ **NOTE:** The **FLYdat** is capable of total running time of up to 9999,9 hours.

OPERATION

Possible display

ROTAX®

Temperature indication

(Exhaust gas, cylinder head, oil and air temperature)
The FLYdat has a 3digits temperature display with the resolution to 1°C or 10°F.

◆ **NOTE:** As previously stated in configuration, the temperature indication is either in °C or °F. As only 3 digits are at disposal, the indication of the exhaust gas temperature in °F shows only 1/10 of its actual value on the display, i.e. indication °F x 10 = actual exhaust gas temp.

Indication of oil pressure

(On engine 912, 912S and 914 only)
The FLYdat has a 3digits oil pressure display with the resolution of 0,1 bar. Besides the generally fitted max. limit control, the oil pressure gauge is furnished with the minimum pressure control.

The control of the minimum oil pressure is linked to the circuit 5 sec. after (for physical reasons) the reaching the engine speed of at least 1000 r.p.m.

The control of the max. oil pressure is without a time-delay.

Flydat status

Section

14 The **Flydat** can be programmed by an authorized dealer for different Warning and Alarm limits, depending on the engine type.

Distinguish three ranges of the status:

- ⇒ **green range** (standard operation)
All readings are below or above (min. oil pressure) the programmed Warning limits.
- ⇒ **yellow range** (exceeding of Warn limits)
If one or more readings exceed the programmed Warning limit, then the reading shows flashing on the display, and simultaneously the control lamps are flashing and the alarm output is periodically (0,5sec.) switching on and off, until the limit stops to be exceeded.
- ⇒ **red range** (exceeding of Alarm limits)
If one or more readings exceed the programmed Alarm limit, then the reading shows flashing on the display, and simultaneously the control lamps are flashing and the alarm output is periodically (0,5sec.) switching on and off, until the limit stops to be exceeded.

OPERATION

Flydat status

ROTAX®

■ **WARNING:** Ignoring the Warning and Alarm signal may cause injuries or endanger the life of the operator or a third party.

◆ **NOTE:** The reading operation of the **FLYdat** remains active, even when exceeding the limits, as long as it is supplied with the required voltage.

The control of the limits responds if the pick-up readings are at or above or below (oil pressure) the programmed limits.

Data recording in operation

Section

15 The **FLYdat** stores the current measured values (the values you can see on the display of the instrument) in the interval of 5 seconds. The values are stored in the ScheckK® memory, which has:

- ⇒ **4-hour rolling memory**, where the measured values are being stored in the interval of 5 seconds.
- ⇒ **20 cases** for storing a 3-minute record of the exceeded values; the line where the value was exceeded is placed in the middle, so the user may look through the history of the values both before and after the excess.
- ⇒ **60 lines** for storing the absolute maximums, which are stored whenever any measured values were exceeded; in this way, the user may find out which maximum operating values were exceeded since the last alarm.

OPERATION

Data recording

ROTAX®

Signalization unit

The **FLYdat** also stores the information about the date and time when some of the measured values were exceeded.

This information is always shown at the beginning of the memory print of the particular case, together with the total time and the serial number.

Data downloading

Section

16 The **FLYdat** is also delivered with the connecting cable for connecting the instrument with your PC. The communication is via the USB, which is a standard part of desktop computers or portable PCs.

After the installation of the programme, which is delivered on a disc or CD (see section 20), and after connecting the **FLYdat** with the PC, you may get unique information about the operation of your engine.

After activating the programme, a dialogue is shown where you have to select, to which socket the **FLYdat** is connected. In the scrollable list, select USB.



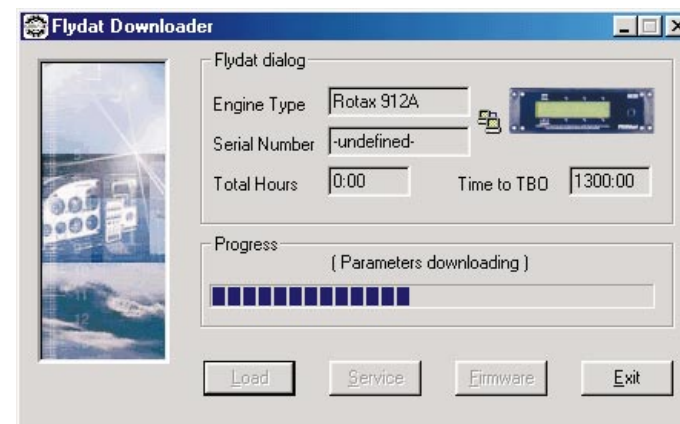
OPERATION

Data downloading

ROTAX®

Flydat downloader

This dialogue enables you downloading the data or recording the firmware.



Firmware Update

Section

17 The **FLYdat** offers the possibility of firmware update by means of a PC and the programme, which is delivered on a floppy disc or CD and which is a part of the **FLYdat** delivery (see the installation process in section 20).

Since the firmware of your **FLYdat** is to be improved and completed with other functions, you may ask an authorized Rotax distributor for the latest firmware version with the detailed description of the updated features and other functions.

REQUEST

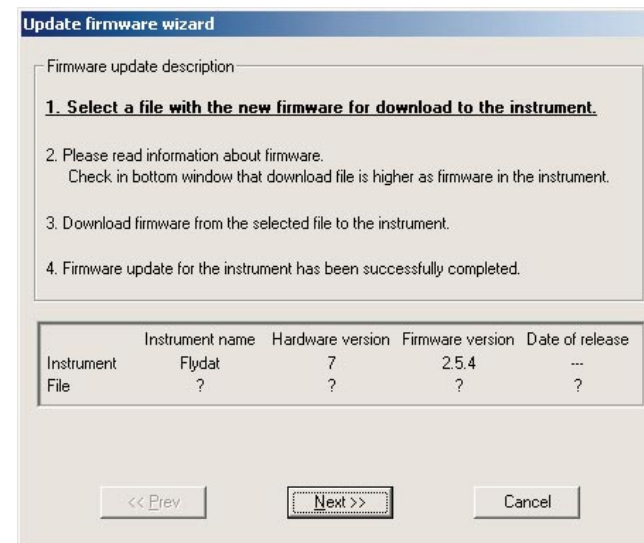
Having any suggestion about the **FLYdat's** functions, firmware or software, please contact the local distributor of the company Rotax.

OPERATION

Firmware update

ROTAX®

To undertake the firmware update, first, download the latest version of the file with the "tls" ending on your disc. Then press the button "Firmware" and follow the process shown in the dialogue.



iFamily® Bus

Section

18

The **FLYdat** offers a wide range of possibilities by connecting to other instruments by means of the iFamily® bus. One of these possibilities is e.g. connecting with the Wireless data communicator TL-5024 for wireless data transfer from the **FLYdat** to your PC anywhere in the world.

Also you can connect the Intercom TL-2424 or Voice warning module TL-5624 for voice warning directly to your headphones or speaker.

In case of connecting with other instruments that support the iFamily®, you may get e.g. a synchronised record of the values measured by the **FLYdat**, but also the information about the altitude from the altimeter etc.

The iFamily® bus is fully supported by the products of the company TL elektronik. The list of the companies (instruments) that support the iFamily® can be found on the producer page:

<http://www.tl-elektronik.com/ifamily.htm>

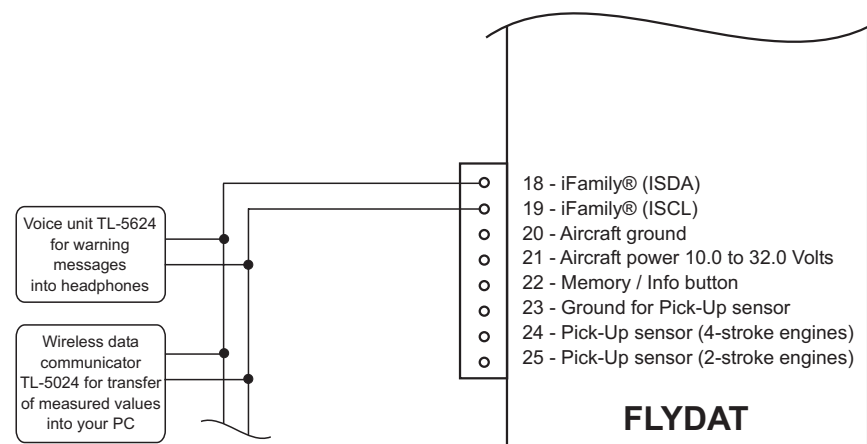
Windows™ is registered trademark of Microsoft Corporation
iFamily®, ScheckK®, sModern® are registered trademarks of TL elektronik
All trademarks and registered trademarks are acknowledged.

OPERATION

iFamily bus

ROTAX®

iFamily® bus:



▲ **WARNING:** Do not connect Aircraft power to the iFamily® ISDA and ISCL pins.

Error Messages and Reports

Section

19 Warning message "COLD ENGINE"

If the oil temperature in a 4-stroke engine does not reach the operating value and, at the same time, the rotation speed exceeded the set value, the warning message "COLD ENGINE" will show on the display and red lamp control on the panel will light up.

Message "ENGINE READY"

If the oil temperature in a 4-stroke engine reaches the operating value, the message "ENGINE READY", which informs you that the engine has run warm, will show on the display.

Warning message "OUT OF RANGE"

If you use the **FLYdat** over the limit temperature assessed in the technical parameters of the instrument, the warning message "OUT OF RANGE" will show on the display, together with the temperature the **FLYdat** has just measured.

The **FLYdat** is always delivered with the front plate for 4-stroke engines, but without any defined configuration.

REPORTS

Errors

ROTAX®

Report of Errors

Test of memories

Starting the **FLYdat** operation, the data composition of the integrated non-volatile memories is checked first. If the check proves negative, the "ERROR" message shows on the display.

◆ **NOTE:** If "ERROR" message is shown on the display, inform your local service immediately.

EGT sensors connection

If the EGT sensor is disconnected, the three dashes [- - -] show on the display. If the EGT sensor selects the polarity, the "Err" message shows on the display.

Other sensors

If the sensor is disconnected, the three dashes [- - -] show on the display.

Software installation

Section 20 Program Installation

In this section there is the software installation process description. Insert the floppy disc or CD into your PC and start setup.exe program. When the program is running, you will see a dialogue window below. Click “NEXT” to continue.

◆ **NOTE:** Prior to *FLYdat* connection it is necessary to install Flydat Downloader software. This is done in the program Setup.exe, which is supplied on a CD enclosed.

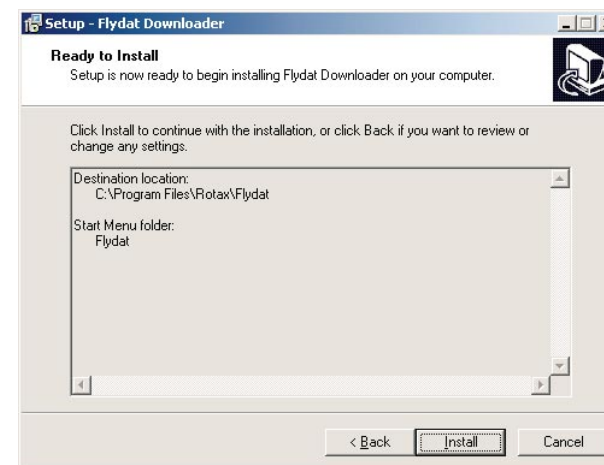


SOFTWARE INSTALLATION *Program Installation*

ROTAX®

Then click on “NEXT” few times until the dialogue window below appears.

To start the installation process, click “INSTALL”.



You can install this program to a PC with Windows95, Windows98, WindowsXP and Windows Vista.

Software installation

Section 20

As soon as the software installation is commenced, the Windows system will inform you that the hardware support installed is not compatible. The message below will pop up on the screen.

Be sure, that the manufacturer has provided full compatibility of the software with Windows system and the software will not cause any destabilisation of your system.

To continue click “Continue Anyway”.

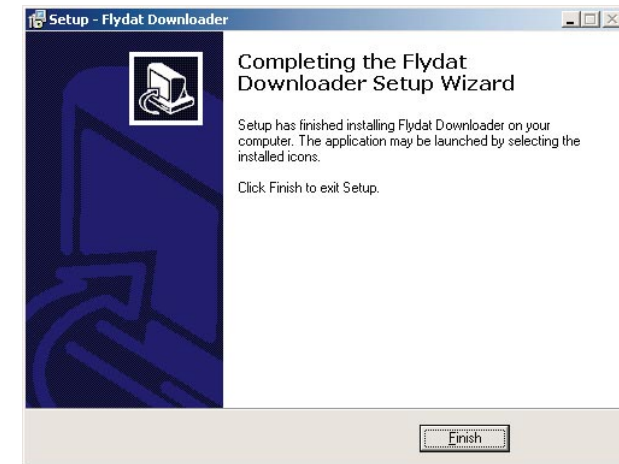


SOFTWARE INSTALLATION

Program Installation

ROTAX®

When you see the dialogue window below, the installation process succeeded. Click “FINISH” to complete the software installation.



◆ **NOTE:** Prior to running the FlydatDownloader.exe program it is necessary to install a driver, see page 28.

Software installation

Section

20 Driver Installation

The **FLYdat** connection to the PC is realized via USB connector. The **FLYdat** is supplied with the needed USB cable with connector type A-B. When the **FLYdat** is connected to the PC, the sign USB CONNECTED will show on the screen. At the same time there will be a dialogue window on the PC “Found New Hardware Wizard”, which will lead you through the installation.

Choose “No, not this time” and click “Next” to continue.

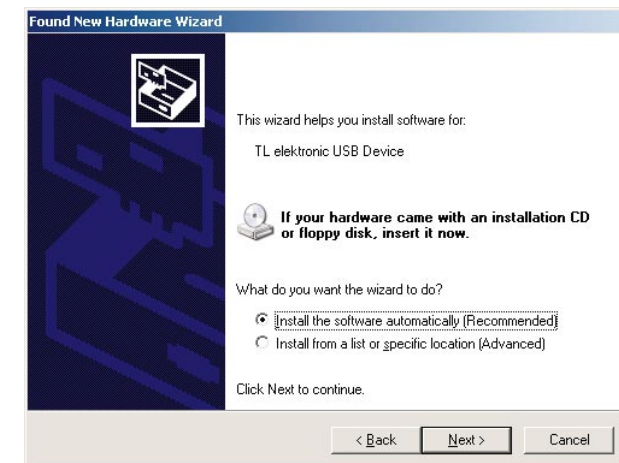


SOFTWARE INSTALLATION

Driver Installation

ROTAX®

In this dialog choose “Install the software automatically” and click “Next” to continue.



Software installation

Section 20

As soon as the driver installation is commenced, the Windows system will inform you that the hardware support installed is not compatible. The message below will pop up on the screen.

Be sure, that the manufacturer has provided full compatibility of the driver with Windows system and the driver will not cause any destabilisation of your system.

To continue click “Continue Anyway”.



SOFTWARE INSTALLATION

Driver Installation

ROTAX®

When you see the dialogue window below, the installation process succeeded. Click “FINISH” to complete the driver installation.

From now on the driver is ready to communicate with **FLYdat**.



◆ **NOTE:** When the FlydatDownloader.exe program starts running, you need to choose type of the communication, see section 18.



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