

Flight Time Logger



Installation and Operating Handbook

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Attention:

These operating and installation instructions are to be used exclusively for the Flisys57P version!

2. Functional principle

The flight time logger records the take-off and landing times and, then, displays the calculated flight duration.

There is also a counter for the "daily total", i.e. the number of landings and the total flight duration since the last time the "RESET" button was pressed. This information is of particular interest when towing or during basic training. In addition, the total hours of the aircraft are tracked and displayed.

The memory records 4,095 flights. After that, i.e., when 4,095 flights are registered, the oldest flight is overwritten each time (ring buffer characteristic).

The engine running time can be recorded separately for each flight and as a total. However, a corresponding signal, e.g. from an oil pressure switch, must be available.

A pressure sensor, connected to the pitot tube's dynamic pressure, serves as information for take-off and landing. The speeds for take-off and landing can be set over a wide range via the setup menu. During the flight, the current time is written to the memory after every minute and the difference to the take-off time is displayed as the flight duration. This procedure has the following decisive advantage over counting the flight minutes:

If the main switch is switched off during the flight, no time is lost. This is especially possible when operating in a motor glider. The flight time cannot therefore be manipulated so easily in the pilot's favor.

However, the motor running time is not counted in this case.

The internal clock is powered by an internal CR 1220 Li-battery with a typical service life of 4 years. Replacing this battery is simple. See page 10.

3. Installation instructions

Installation should be carried out by an authorized company. It is generally limited to the electrical connection, connection of the back pressure and mechanical installation. The device fits into the standard 57 mm mounting holes.

An external switch can be used instead of the internal pressure sensor. Connection to device - GND corresponds to "On Air". If separate motor run recording is required, the "ENG ON" input is available for the oil pressure sensor.

The connection to the on-board power supply is made via the 9-pin plug on the rear panel of the device and should be fused on the aircraft side. Voltage range is 12 - 24 V. The appliance is protected against overvoltage and incorrect polarity by an internal electronic fuse. This fuse resets itself automatically after approx. 15 seconds.

The connection for the back pressure is also located on the rear panel of the appliance. This is detached from the speed sensor connection using a T-connector and hose.

Important: - Pay very close attention to the tight fit and tightness of the hose! If necessary, secure the hose using clamps. Avoid contamination of the hose and connections at all costs! Leaks or contamination of the back pressure line can lead to failure or errors in the speed display!

Motor control connection:

If an oil pressure switch is available for the motor, it should switch to ground if possible. This function can be activated and the polarity set in the setup. A diode, e.g. 1N4004, should be connected in series according to this drawing in Figure 1.

For other solutions for recording the motor running time, please contact the manufacturer.

3.1 Plug on devices - rear panel

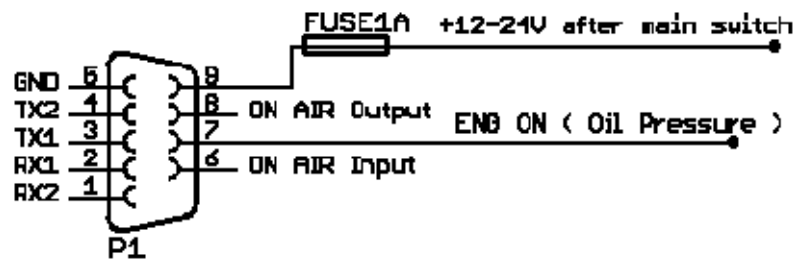


Figure 1 : Motor control connections.

Description of the connections:

- Pin 5** GND
- Pin 9** 12-24V
- Pin 6** OnAir" or "OnGnd" output. GND - Level as "On-Air" or "On-Ground" signal. For transponder mode S. Can be set under Setup.
- Pin 7** Signal for motor run recording. Input to ground. Setting under Setup
- Pin 1** RX2 Without function in this version
- Pin 4** TX2 Without function in this version

The remaining pins have no function in this software version.

4. Operation

After switching on the main switch, the time and date are displayed for function control.

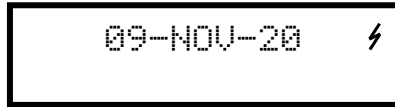


Figure 2 : "Home position". The spark symbol indicates that the motor is running and the motor time – recording is activated.

This is the "home position" in which settings can be changed and flights queried if necessary.

4.1 Settings

From the home menu (date and time displayed), press the "TOTAL" button and the "FWD" button for more than 7 seconds to access the setup menu.

The following settings can be made here:

1. Setting the reading angle of the display
2. Brightness of the backlight
3. Setting the time
4. Reset the total time *
5. Setting the speed levels for take-off and landing in km/h *
6. Setting the engine run control
7. Setting the "On Air" output
8. Format EEPROM *
9. Setting the security code. Factory setting 0000*

Attention: A forgotten code can only be restored by a "factory reset". See page [10](#).

* These settings are only accessible via the security code.

These various settings are made in dialogue with the display and are self-explanatory.

4.2 Setting the display

This is optimally adjusted after installation and does not need to be changed often.

4.3 Setting the backlight

The backlight should only be set discreetly to the ambient light.
 The power consumption of the appliance depends very much on the illuminance.
 The built-in display can be easily read even when the lighting is switched off, provided there is sufficient ambient light.

4.4 Setting the time

The time changes only minimally during normal operation, so setting it should only be necessary when switching between summer and winter time.

After several years of operation, the battery may be depleted. In this case, the time will not be retained after switching off the main switch. The lithium battery can be replaced by the user after opening the device.

Battery type: CR1220.

However, the device can still be used in this condition if the time is set correctly each time the main switch is turned on.



Figure 3 : Display during time setting.

Pressing the right outer button cancels the process, while pressing the left outer button continues it.

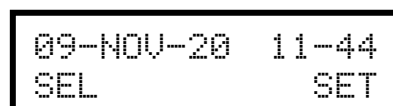


Figure 4 : Display after pressing the left button.

The left button is used to select the time unit, and the right button is used to set it.

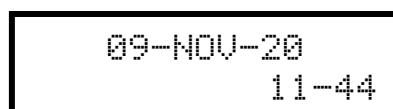


Figure 5 : Display after leaving the last digit.

Pressing the left button allows the setting process to be repeated.

After pressing the right button, the time setting is completed, and the time starts running. The seconds begin at 00.

These settings are only accessible after entering the security code.

4.5 Setting the total – total

When the device is installed, the current flight hours of the aircraft and optionally those of the engine are set. The procedure is basically the same as setting the time.

4.6 Setting the speed levels for take-off and landing in km/h

First, the speed for "Start" is set in the dialogue via the LCD.
The selectable range is 60km/h to 125km/h in steps of 5km/h.
The speed for "Landing" can then be set.
The selectable range is 50km/h to 95km/h in steps of 5km/h.
It is not possible to overlap the speeds.

4.7 Setting the engine control

Note: With this software version, the motor running time is recorded exclusively via the "ENG ON" input.
The first step is to decide whether to switch this recording on or off.
In the second stage, a decision is made as to whether the supplied signal "LOW" i.e. aircraft ground or "HIGH" open is available when the engine is running.
When the engine running control is switched off, the corresponding information on the display is switched off.

4.8 Setting the "On Air" output

Depending on this setting, the "ON AIR" output is switched to earth or interrupted and serves as a signal for transponders.
When "LOW" is active, the output is switched to ground when the device detects "Airborn". With "HIGH" it is connected to ground when "on ground". (for Garrecht Transponder)

4.9 Zero Speed

Sets the speed sensor to 0 or to the current air pressure.
The relative offset appears on the display for a short time.

4.10 Format EEPROM

Deletes and formats the entire memory

4.11 Setting the security code

Setting the numerical number as the password for protection against tampering. Do not forget!

4.12 In flight

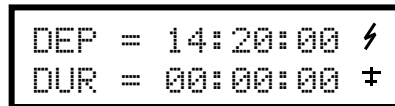


Figure 6 : Display after startup.

To avoid reacting to gusts, the switching occurs only after the dynamic pressure switch has been continuously activated for 15 seconds. A small arrow symbol on the display signals in advance that the pressure sensor has been triggered.

This serves as a control mechanism and activates the "ON AIR" signal. During the flight, the takeoff time remains displayed, and the flight duration is updated on the display every minute. The engine runtime is displayed in rounded minutes.

After landing, the display shows the data of the last flight for approximately 3 minutes. A delay is also built in for detecting landings to prevent reactions to gusts. This delay has been deliberately set slightly longer (about 25 seconds) to compensate for any shift in the takeoff time.

If the current flight minute exceeds 30 seconds, the flight time is rounded up to the next full minute.

4.13 After the flight

The following information can be retrieved after landing (the last flight is automatically displayed for about 3 minutes after landing):

Start, landing time and duration of the last 4,095 flights

To do this, press the "BACK" button under the label "FLIGHT LOG." The display will now show the last flight.

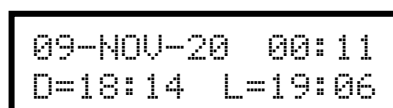


Figure 7 : Example of start and landing time display.

The date, start and landing time, as well as the flight duration, will appear in the top right corner.

Pressing the "BACK" button further will retrieve the previous flight. The "FWD" button allows you to scroll in the opposite direction.

Totalisator

This information is best compared with the trip odometer in a car. It is not necessarily the total for one day, but the total since the "RESET" button was pressed and is intended for summarized entry in the logbook, especially for towing operations and basic training. The second line shows the total hours of the aircraft.

Display after pressing the "TOTAL" button:

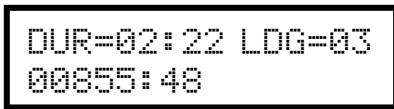


Figure 9 : Display with motor running time **OFF**.

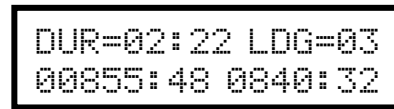


Figure 8 : Display with motor running time **ON**.

The maximum values are: DUR=99:59 LDG=99

Press the "RESET" button to set the daily total to "0".

4.13.1 Incorrect recording

An incorrect recording is saved with the flight data and marked on the display with a "?" in front of the flight duration.

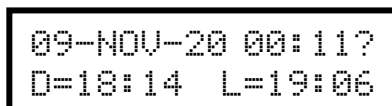


Figure 10 : Example of an incorrect recording.

Possible cause:

The aircraft landed with the main switch switched off or the power supply was interrupted for another reason.

5. Factory - Reset

Pressing the "TOTAL" and "FWD" buttons simultaneously while the appliance is switched on resets various basic settings. This concerns:

- Backlight and contrast
- Security code set to 0000
- **Totalizer** the values DUR + LDG

Attention: This information should not be available to users!

6. Replacing the battery



Figure 11 : Battery location

7. Devices – rear

Pressure - Connection (Pitot) with 0.15 mm nozzle. Do not remove these!



Figure 12 : Rear view with nozzle and connector.

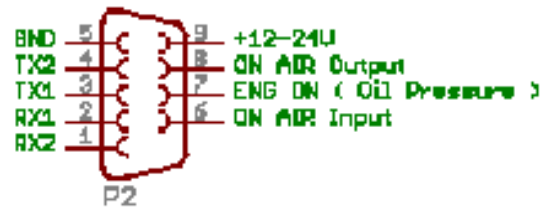


Figure 13 : Pins connection.

8. Technical specifications

Supply voltage	10 to 28V DC
Supply current	30 mA approximative
Battery lifetime	6 years typ.
Battery Type	Lithium CR1220
Weight	180 gr
Departing speed	> 60 .. 110km/h
Landing speed	< 50 .. 90 kmh
Maximum plane speed	400 km/h
Dimension (mm)	57 diameter standard hole, 82 X 82 X 100
Operation Temperature	-20 to 60°C

Warranty of 2 years!