FLYBOX®

Digital altimeter ALT57

Revision#2.0, 18/11/2014
For firmware version 1.7

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SECTIONS

Thank you for purchasing a Flybox® product. We hope it fully satisfy you and makes your flights pleasant and secure.
Developing ALT57, our intent was to create a compact and lightweight digital altimeter, easy to install and quick to consult.

SYMBOLS USED IN THE MANUAL

NOTE: Used to highlight important informations.

CAUTION: Used to warn the user and indicate a potentially hazardous situation or improper use of the product.

WARNING: Used to indicate a dangerous situation that can cause personal injury or death if the instruction is disregarded.

NOTE: Keep this manual in the aircraft.
This document must accompany the instrument in the event of change of ownership.

NOTE: This device is intended for installation onto non type certified aircraft only, because it has no aviation certifications. Refer to your local aviation authorities to check if this device may be installed in your aircraft.

CAUTION: Read entirely this manual before installing the instrument in your aircraft, and follow the installation and operating instructions described here.

CAUTION: Using this instrument over the maximum allowable ranges can cause malfunction or wrong indications.

CAUTION: Microel s.r.l. reserves the right to change or improve its products. Information in this document is subject to changes without notice.

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SECTION 1

1.1 MECHANICAL INSTALLATION

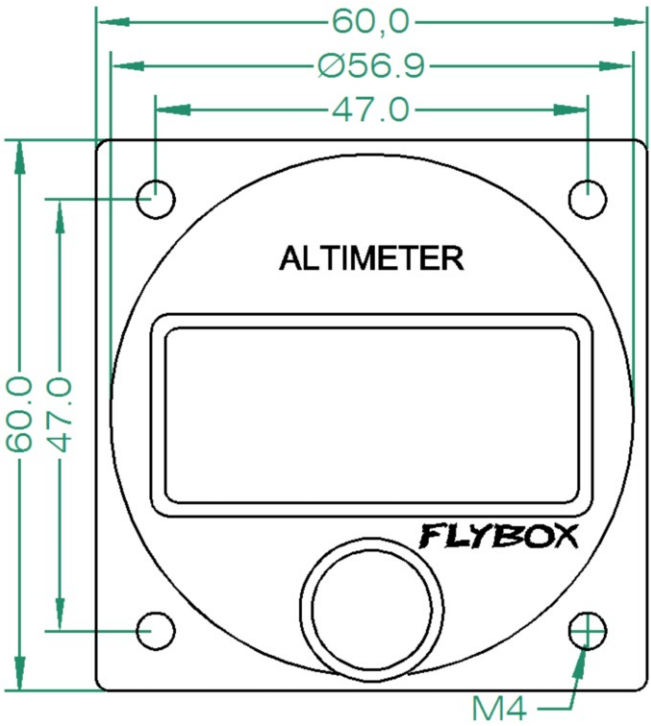
1) The ALT57 fits in a standard 2 1/4” (57mm) panel cutout.

2) It's recommended to choose a position that permits optimal display visibility.

PRESSURE PORT CONNECTION:

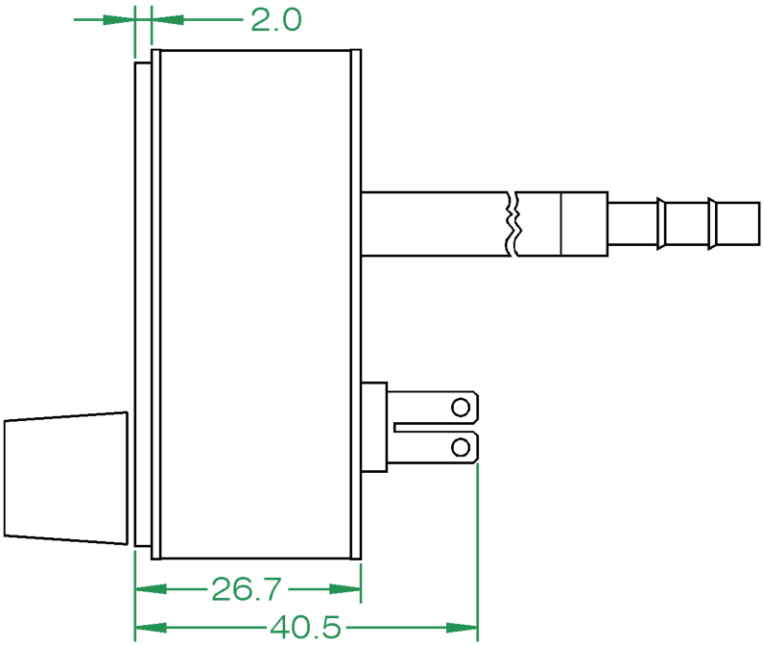
Connect the pipe fitting on the back of the instrument to a static air pressure lines; the furnished pipe fitting is suitable for pipe with internal diameter of 5 mm.

1.2 DIMENSIONS



Front view

Dimensions in millimeters



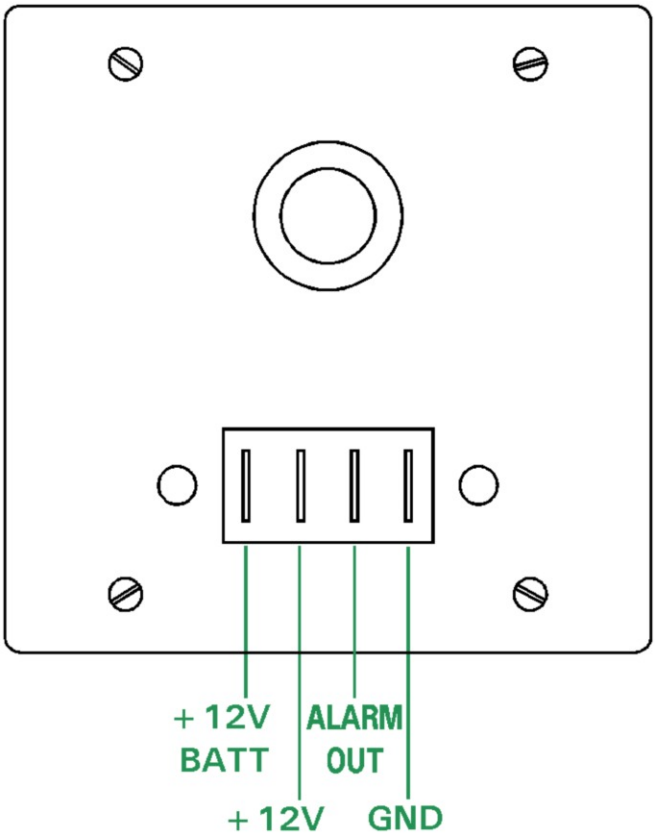
Side view

Dimensions in millimeters

SECTION 2

2.1 ELECTRICAL INSTALLATION

On the backpanel of the ALT57 there's a four-pole connector (faston 6.3 mm); the connections are:



Connections detail:

+12 BATT: power lead, can be connected to an auxiliary backup battery, if present.

+12 V: power lead, connects to 12Volt main line.

ALARM OUT: altitude alert alarm out (300mA max).
Connect the load (for example a lamp indicator) between this out and +12V.
See chap.3.2 for explanation on the altitude alert function.

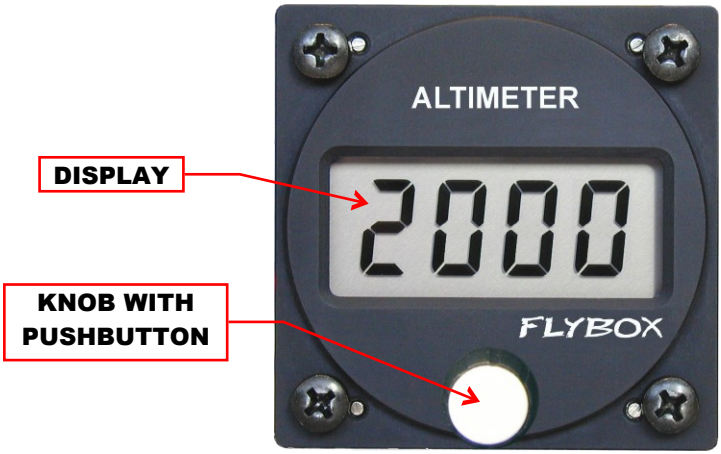
GND: ground lead.

NOTE: Insert a 1A circuit breaker or fuse to the power lead. (**+12V**).

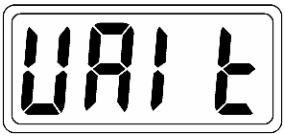
CAUTION: Voltage peaks on the supply line that exceeds the operating limits can damage the device.

SECTION 3

3.1 USE OF THE INSTRUMENT



- At startup the display briefly shows the software version, then it display this indication for 30 seconds to allow warm- up of the solid-state sensor:



After this short warm-up period it become operative and it shows the current altitude.

Using the ALT57 is very simple: rotate the knob to adjust the altitude (in the same way you do in a mechanical altimeters); it's also possible to adjust directly the pressure reference instead of the altitude: click on the knob and the display will show the actual pressure reference. Rotate the knob to adjust the value, then press again the knob or wait two seconds to return to the altitude display.

NOTE: if the first digit of the display is flashing add 10000 to the value displayed (it only happens when the unit of measure are in Feet and the actual altitude exceeds 9999 feets).

CAUTION: Before using the altimeter for the first time you must set-up the unit of measure for the altitude and for the pressure (read chapter 4.1 “Instrument setup”); the default settings are Feet (altitude) and mBAR (pressure).

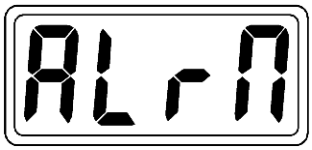
3.2 ALTIMETER ALERT

The altimeter alert function activate a visual indication on the display when the altitude exceeds the minimum or maximum altitude limits.
To set-up the alert function press the knob for 1 second until the display show the first parameter to set; for all the parameters the display alternate the view of the parameter's name with it's numeric value.

- To scroll to the next/previous parameter rotate the knob.
- To modify the parameter displayed press the knob, adjust the value and press again the knob to store the value and return to the parameters list.
  The parameters to set are:

HIGH LIMIT: set the maximum altitude above which the altitude alert is activated

LOW LIMIT: set the minimum altitude below which the altitude alert is activated



ALARM: Enable (On) or disable (OFF) the altitude alert.

DONE: Return to the altitude display.

NOTE:
- Remember to click on “Done” to return back to the normal operations (altitude display).

- When the altitude exceeds the low or high limit the display alternate the altitude view with the words “HIGH” or “LOW”; in this condition the ALT57 also activate the alarm out on the backpanel of the instrument, useful for example to lighten a LED on the panel.

SECTION 4

4.1 INSTRUMENT SETTINGS

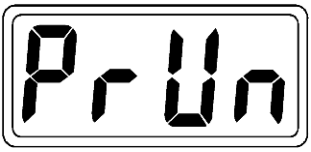
To enter in the instrument setup press and keep pressed the knob with the instrument turned off, then power on the ALT57 and wait 5 seconds until the display shows the first parameter to setup.

For all the parameters the display alternate the view of the parameter's name with it's numeric value.

- To scroll to the next/previous parameter rotate the knob.
- To modify the parameter displayed press the knob, adjust the value and press again the knob to store the value and return to the parameters list.
- When you have completed the setup turn off the ALT57: the settings will be stored in memory.

ALTITUDE FILTER: the value vary from 1 (minimum filtering, the altitude displayed will change rapidly) to 255 (maximum filtering, the altitude displayed will change slowly). Default = 100.

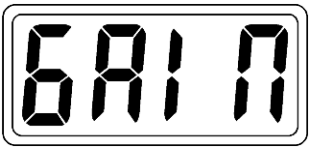
ALTIMETER UNIT: Select which unit of measure will be used for the altitude between meter (Mt) or feet (Ft). Default = Ft.



PRESSURE UNIT: Select which unit of measure will be used for the pressure between milliBar (Mb) or inches of mercury (In).
Default = mBAR.

SENSOR CALIBRATION: Don't modify this parameter, the altimeter is factory calibrated.

DISPLAY UPDATE: with this parameter you can choose the display update rate between 0 (continuous display refresh) and 10 (updated one time per second).
Default = 3.



SENSOR CALIBRATION: Don't modify this parameter, the altimeter is factory calibrated.

NOTE: To reload all the parameters to its default value follow this procedure:
with the instrument turned off press the knob then power on and wait 15 seconds; on the display first it appear the word “Filt” after 5 seconds then it appear the word “Defa” after 15 seconds.

SECTION 5

5.1 TECHNICAL SPECIFICATIONS

- **Standard mounting 2 1/4" (57mm).**

- **Dimensions:** 60.0 x 60.0 x 40.5 mm.

- **Weight:** 125 g.

- **Supply voltage:** 9 ~ 30 Vdc=.

- **Supply current:** 42 mA @ 13.8 V.

- **Operating temperature range:** -20 ~ +70°C.

- **Humidity:** 90% max.

- **Altimeter range:** -1000 ~ +20000 feets.

- **Sensor resolution:** 10 feets.

- **Alarm out:** open-collector, 300mA max current, active low.

WARRANTY:

This product is warranted to be free from defects for a period of 12 months from the user invoice date.

The warranty only cover the manufacture's defects; shall not apply to product that has been improper installed, misused or incorrect maintenance, repaired or altered by non-qualified person.

Data	Versioni	Descrizione
03/2010	1.3	Updated warm-up time.
10/2012	1.4	Updated setup parameters.
11/2014	2.0	Layout update.

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