



SkyDrop user`s Guide



Electronic user's guide released subject to "SkyDrop User's Guides Terms and Conditions, 1th September, 2015"

SkyDrop User manual

Combined Vario (GPS, Bluetooth, SD card, Digital compass, accelerometer, thermometer and humidity sensor)

Dimensions: 62x98x22 (super compact)

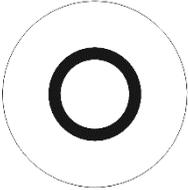
Weight: 67g (extra light)

Battery type: Li-ion single cell (USB rechargeable)

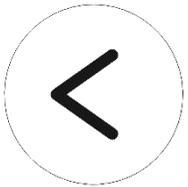


Buttons Functions

The middle button has following functions

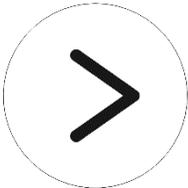


- turn device on - press and hold for 1 second
- turn device off - when on home screens press and hold for 5 seconds
- on home screen, press to change widget value
- in menu, short press to confirm selection
- in menu, press and hold to exit to upper level



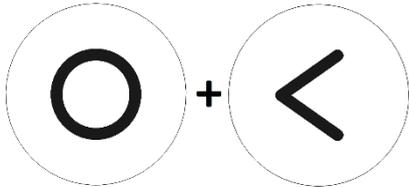
The left button has following functions

- scroll between screens to the left side
- scroll up in menu
- lower value during setting parameter

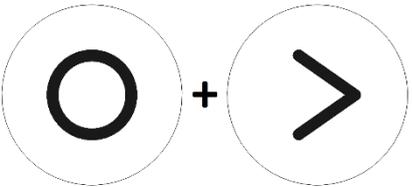


The right button following functions

- scroll between screens to the right side
- scroll down in menu
- upper value during setting parameter



- press and hold the middle button, when navigation bar appears at bottom of the LCD, shortly press the right button to enter widget menu



- press and hold the middle button, when navigation bar appears at bottom of the LCD, shortly press the right button to enter main menu

Device Menu navigation

1. Vario

- Lift threshold
- Sink threshold
- Weak lift
- Fluid audio (if enabled sound frequency will change during beeps)
- Digital vario int.
- Average vario int.
- Units

2. Altimeters

- Altimeter 1,2,3,4,5
- QNH1 for Altimeter 1
- QNH2F

Altimeter settings

-mode (Relative, Absolute QNH1, Absolute QNH2, Absolute GPS)

- Relative to (choose Altimeter)
- Zero at Takeoff
- Units
- Get from GPS

3. Logger (Auto start)

- State
- Threshold
- Suppress audio

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4. GPS

- Enable GPS
- Status
- GPS time
- GPS date
- Speed units
- Format

5. Bluetooth

- Bluetooth module information

6. Settings

- Time and Date
 1. Time
 2. Date
 3. Time Zone
 4. DST
 5. Sync with GPS
- Display
 1. Contrast
 2. Backlight
 3. Backlight timeout
 4. Invert display (invert display colors)
 5. Flip orientation (flip image 180 deg.)
 6. Animation
- Audio (general volume)
- Mass Storage

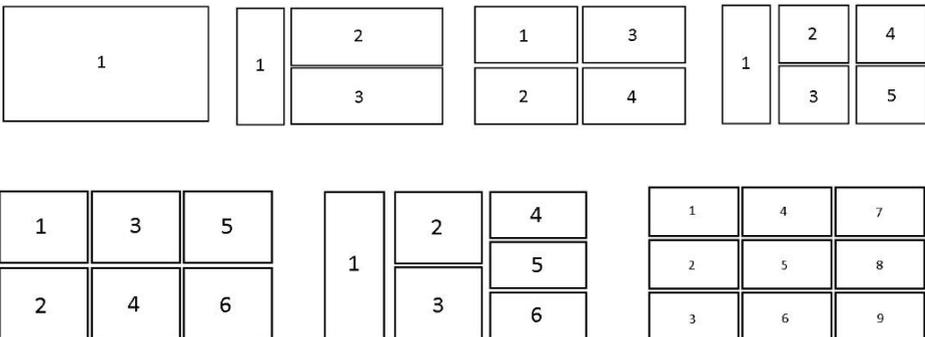
7. Debug (software info, reset factory test) development only

Widgets settings

Available widgets:

1. Empty
2. Debug
3. Vario
4. AVG vario
5. Vario bar
6. Altitude 1,2,3,4,5
7. Accelerometer X
8. Time
9. Flight time
10. Temperature
11. GPS Heading
12. Ground Speed
13. GPS position
14. Battery

Available layouts:



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Descriptions of Functions

Lift / Sink threshold – These thresholds correspond to the climbing and sinking rates at which the sound activates

Fluid audio – If enabled sound frequency will change during beeps

Digital vario integration interval – samples to average before vario value is displayed, this is not affecting vario bar graph of sound output

Average vario integration interval – samples to average before average vario value is displayed

Altimeters – allows the user to adjust the barometric altimeters. A barometric altimeter calculates altitude based on atmospheric pressure. Since atmospheric pressure can vary substantially with meteorological conditions it should be calibrated prior to takeoff. Calibrating the main altimeter can be achieved by entering the known altitude of location. Changing altitude of the main altimeter automatically calculates the QNH. This method allows calibrating the altimeter by either entering a known altitude at the current location, or known QNH for particular location instant in time at current location.

Logger (Auto start) – This setting will keep the Vario quiet until a “start flight” has been detected. A start flight is detected when the instruments detect altitude variation of 4m in default but you can set the value as you like.(0 to disable) Suppressed audio is in default turned on.

Important information:

We highly recommend to use both velcro and safety strap when flying with SkyDrop.

SkyDrop comes with (velcro, strap, SkyBean sticker, manual) and it has 2year warranty.

Device Update instructions

Watch video tutorial on Skybean YouTube channel or follow these instructions.

- 1.** Connect SkyDrop to the computer using micro USB cable.
- 2.** Wait until USB mode is enabled and device folder will pop out.
- 3.** You can find update files here <http://skybean.eu:8080/repo/updates/> largest number is the newest build.
- 4.** Please read carefully additional instructions before update when they are included in build directory (e.g. **Warning.txt**, **Readme.txt**)
- 5.** Copy files **UPDATE.FW** and **UPDATE.EE** to the device. (file name must stay the same, so be careful if you download the file multiple times - number 1, 2..must be deleted)
- 6.** Eject the device from system toolbar and then long press right button.
- 7.** SkyDrop led will lid yellow, when the update is applied.
- 8.** Disconnect USB cable and you are done.

Alternatively you can find the updates in our GitHub account <https://github.com/fhorinek/SkyDrop>

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FAQ / Troubleshooting

Q: How can I recharge SkyDrop battery, update firmware or track logs download?

A: All of these tasks are done via micro USB port located on the back.

Q: Turn on/off Bluetooth, GPS and other hardware blocks.

A: You can switch off unneeded blocks to save power.

Q: Is it possible to show GPS-altitude in meters and ground speed in km/h on the display?

A: Yes, it is.

Q: 3: Does the recording of track logs start and stop automatically?

A: Yes, it does.

Q: How you can add new feature without sending SkyDrop back to you?

A: All devices will come fully hardware assembled, only software updates will unlock its usage step by step.

Q: Will your vario show climb, altitude, time of flight?

A: Yes, of course.

Q: Is Skydrop watertight? Or at least have some resistance if I catch an afternoon rain?

A: SkyDrop has some water resistant ability, due to protective paint on PCB, but it is not waterproof. We will do our best to make maximum in this task (like with SkyBean), but there are some physical limits.

Q: are you planning to have an android app to program Skydrop directly from a smartphone via Bluetooth instead of PC? (I mean like basic stuff, like sink threshold and vario average interval, QNH, etc), this would make life much easier if someone is on a flying trip for a week or so without a laptop

A: we will not develop our own smartphone app to change setting, because SkyDrop has its own user interface (LCD and buttons). You can change all parameters directly.

Q: do you have a clip or similar to put the Skydrop onto a riser instead of helmet or at the moment only the good old Velcro is the solution?

A: We made mount for riser assembled with classic Velcro and also you can put SkyDrop on cockpit in front of you

Q: later when the GPS will be useable in future updates, will you have any other screen for GPS route planning or only the altitude & variometer stays on such a small display?

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A: You will be able to define some waypoints through GPS coordinates directly by buttons, or upload from other source via Bluetooth or cable (right now, we not have prepared it exactly).

Q: how much autonomy does it have?

A: you can use SkyDrop as a standalone device like standard analog/digital and acoustic vario with GPS track log stored to built in micro SD card. In addition, Bluetooth connectivity offers real-time connection with XC apps running on smartphone or tablet, so it is up to you, what mode will you choose.

Q: will you use the accelerometer as to filter the inertia of vario ?

A: We implemented complete 10D IMU, so yes we are going to make fusion to accelerate vario response

Q: There is no sound from vario, even if display shows rising or falling when moving up or down.

A: SkyDrop starts in silent mode, with auto take off detection (default threshold $\pm 4\text{m}$). Audio will start working when initial altitude will change out of threshold range. (You can simulate take off, if you quickly suck or blow to the buzzer grid in upper right corner).

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