Butterfly Vario - Now the Air Glide System

The Butterfly Vario has been superseded by the new Air Glide modular system. What was the Butterfly vario is now composed of the Air Glide Sensor Unit (ISU) and the Air Glide Display S. The Sensor unit is the heart of the system and contains all sensors and an IGC certified flight recorder. It computes vario, airspeed, instantaneous wind, air mass movement, GPS-Position, magnetic heading and attitude.

The relative air-mass movement around the aircraft is measured in real time through the use of 14 separate sensors instead of the standard practice to use only pressure sensors to sense aircraft/airmass movement. Independant of flight direction the pilot sees real time air-mass and wind data updated repeatedly every second.

Price: $3299 (US)

Sensors

The sensor unit contains 3D accelerometers, 3D rate gyros, 3D compass sensors, and a highly accurate GPS receiver. This makes the Sensor Unit a full-scale inertial measurement unit. These sensors, combined with 4 pressure sensors for cabin-, TE-, static-, and dynamic pressure, generate a vast amount of data that is processed in advanced sensor fusion algorithms to compute the aircrafts current attitude, speed, position, and to determine current wind and vertical airmass movement.

Small and versatile

Even though its packed with technology, the sensor unit is very small. This makes installation within its requirements (straight, level and without too much magnetic interference) easier to accomplish. The data interface and power supply works with a single cable with robust industrial technology cables and connectors. Cable lengths of over 10m are possible. Flights from the integrated IGC Logger can be downloaded from any connected display unit.

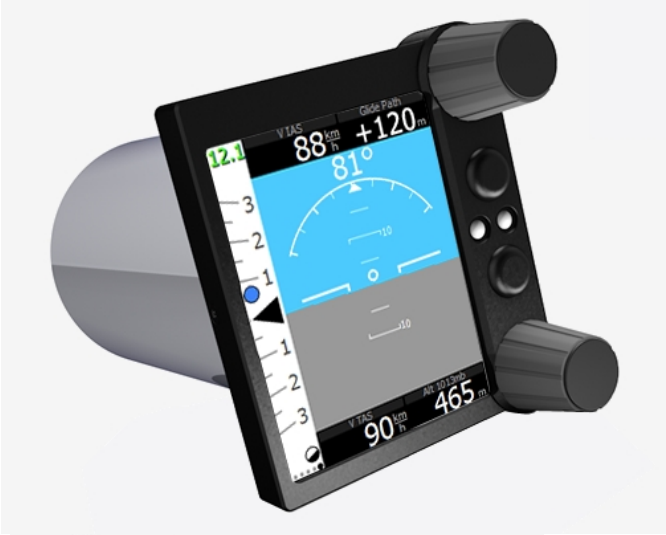
Live Wind - a new dimension in wind calculation

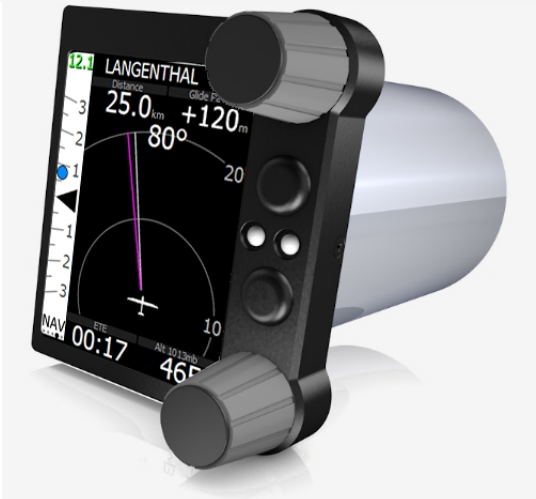
The permanent computation of wind direction and strength (we call this "live wind") helps pilots interpret their surroundings in a new way. You can see how wind becomes weaker or still in the center of lift and how air flows into and out of a thermal. Local wind systems in mountainous regions can be easily discovered.

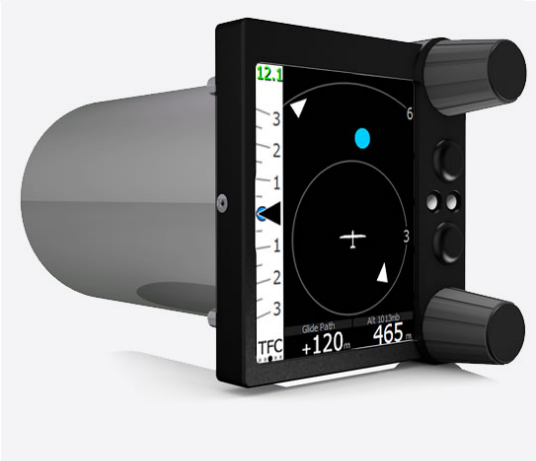
The vertical airmass information (VAM) offers a gust independent view on the current vertical airflow, easier to interpret and less prone to wrong indications than average netto variometer signals.

The Display S installs in a standard 57 mm cut-out and features a 2.7" colour LCD screen that is readable in any lighting condition.

Besides being a vario, there are also artificial horizon, navigation and Flarm display screens .







Read more...

FAQ's

The Butterfly Vario featurse an artificial horizon. Will it be allowed to use it in competitions?

The artificial horizon can be deactivated. The deactivation is logged by the integrated IGC-Logger and thus is tamper-proof. Butterfly urges rulemaking bodies to introduce new competition rules that forbid the use of equipment that enables cloud flying but allows the installation and deactivation of such equipment during competitions.

What is the fundamental difference between the Butterfly Vario and a conventional variometer?

A conventional variometer only uses changes in air pressure (TE-pressure, static- and total-pressure) to determine energy changes the aircraft experiences. Butterfly Vario additionally uses an inertial sensing platform. This allows for better compensation, advanced gust filtering and realtime determination of wind.

What is so special about the wind determination?

Butterfly Vario determines the current wind in realtime. Indendent of pilot behaviour the wind is computed many times per second. The pilot gets accurate wind when flying straight or circling without having to keep a certain flying direction.

Is the Butterfly vario field-proven?

Butterfly Vario units have been tested in-flight throughout 2011 and pilots have already participated in international competitions flying with the Butterfly Vario.

What about the vario tone and voice output, will that distract?

Voice output and vario-tone are fully configurable. You can deactivate it if desired. The generated tones are fully synthetic and can be individualized if desired.

Is the Butterfly vario robust?

Butterfly Vario only uses industrial grade components making it the most rugged design we have seen so far. Cables, electronics technology and enclosure are fully certifyable after high certification classes regarding vibration, shock, power-input and temperature. The used cables and interface are state of the industry and for example are used in Boeing 787 and Airbus A380 aircraft.

Why so expensive?

Because the used technology, integrated sensors and software are expensive and the best available. If we had compromised the design, it would have been cheaper. But we did not do that.

What is the main advantage of the modular concept?

Butterfly vario is fully modular and part of a modular product family strategy. Sensor-unit, display-unit and future products (e.g. big-screen glide computers) all share the same interface and hardware layout. Next to many technical advantages this brings one major advantage: It conserves the money you have invested.

In the past, when new technologies became available (e.g. better sensors), users had to change their whole system which normally means huge financial and technical efforts. Our modular family-strategy makes certain modules interchangeable. For example if you want new sensors, you can buy a new sensor-unit and leave the rest of the system as it is. This allows for easier and cheaper adoption of new technologies and keeps your systems value/resale-price high.

Will there be more from Butterfly?

Yes. We are currently developing a full scale glide-computer system with large display that will connect to the vario. In the future even more products will be developed that take use of the interface-bus (CANaerospace) that has been introduced to gliding with our vario.

Is the Butterfly Vario also an IGC-certified Logger?

Yes. There is an IGC-Logger built into the Integrated Sensor Unit (ISU) of the system certified after the highest possible level.

I have an Antares/Arcus E or a jet-powered aircraft, can I use the IGC-Logger to log my flights?

Yes. The IGC-Logger in the ISU will feature a special interface for a second engine-noise-level-sensor (ENL) that is needed for such aircraft.

How can I access my log-files?

Butterfly Vario features a USB-Port. You can simply use a standard USB-Stick to read out your

IGC-Files.

What can be interfaced to the Butterfly Vario?

The Butterfly Vario can be connected to many third party devices (e.g. PDAs for navigation). In order to convert the signals from the vario to standard NMEA-signals (most PDAs use), you will need a special inexpensive little box, the NMEA-Interface-Box. In order to interface iGlide devices (iPhone/iPod/iPad) you will need an iGlide-Interface-Stickthat sets up a wireless communication.

Is the display sunlight readable?

The Display is a latest technology display with extreme contrast in sunlight. Just like printed paper the display features a very good contrasty readability. Although it only consumes very little power it is perfectly sunlight readable.

Can I use the vario together with another flight computer in the same cockpit?

Yes. The Butterfly Vario consumes little space and power (only 85-110mA). It can be easily integrated into existing cockpits. The SC/Vario switch can also be shared by both devices.

Why are there no airspaces or task management?

The main function of the Butterfly Vario is the variometer function. We designed the Butterfly Vario to be a variometer with some additional features. The navigation is intended as a backup or for recreational flying. A too prominent navigation function would distract. Navigation needs more display space, a variometer needs a dedicated display. We are currently developing a navigation system with larger screen that will seamlessly integrate into current Butterfly Vario installations. An additional navigation system can be interfaced, for example PDA/PNA based systems or iGlide.

Is the installation difficult?

You will have to install 2 separate devices, the display unit and the integrated sensor unit. - The installation of the display unit is easy. It fits into a normal 57mm panel cutout. All necessary cables are provided. - the ISU has to be installed in flight direction. It has to be installed as aligned to the aircrafts axes as possible. Misalignments can be calibrated after installation.

How accurate is the compass, what about calibration?

The compass is very accurate and does not depend on certain attitudes to function properly. It works without compass-errors. The built-in compass module is continuously calibrated by software utilizing GPS and rate-gyro information. There is no need to adjust/calibrate it, not even after installation. Most magnetic fields next to the compass are compensated by software as well.

Is the vario compatible with FLARM®/PowerFLARM®?

Yes, PowerFLARM®/FLARM®-devices can be directly wired to the vario. The received traffic is shown on a special traffic page and voice warnings are given if collision-threats are detected. E.g. Butterfly Vario says: „Traffic, 12 O Clock, high".

Is data from a wired FLARM®/PowerFLARM® available for third party devices?

Yes. All the FLARM®/PowerFLARM®-Data from an compatible devices is put out via the third-party interface of the vario to third party devices.