Manual

33601 VARIO Modul Graupner HoTT 2.4

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Manual V1.6
Revision: November 2011

THANK YOU
for purchasing the Graupner HoTT VARIO MODULE.
If you do not have the Graupner HoTT 2.4 radio system this product will not work. This product is not compatible with any other 2.4GHz radio system.
Please read through this entire manual before you attempt the installation and usage of your Graupner HoTT SMART-BOX!

These operating instructions are part of this product. They contains important notes to the operation and handling. Please take this into consideration when you pass on the product to third parties. Neglect of the operating instructions and the safety instructions lead to expiring the warranty.
Graupner constantly work on the advancement of all remote control systems; changes of the scope of delivery in form, technology and equipment we must reserve ourselves therefore. Please have understanding for the fact that from data and illustrations of this operating instructions no requirements can be derived.
Please keep these instructions for further reference!

1. DESCRIPTION
The Graupner-HoTT VARIO-Module enables the wireless monitoring of the altitude and the graphical and acoustic indication of climbing or descent of the model in real time. The VARIO-MODULE can be programmed directly with all HoTT transmitters with integrated telemetry in the transmitter display (some models such as MC-24 with update or modification).
The following transmitters must be programmed via SMART-BOX order No. 33700: mx-12 HoTT order No. 4754, mx-16 HoTT order No. 4755, and mx-22 No. 4801/4802, mc-19 No. 4821 and mc-22 No. 4818 after conversion to HoTT. This differentiation between the transmitter models and the resulting operation is explicitly mentioned at the appropriate point in the instructions.

Informations available - Setup:
Current Altitude, Min. Altitude, Max. Altitude, Climb-/Sinkrate/s, Climb/-Sinkrate/3s, Climb/-Sinkrate/Min., Continous Vario, accuracy: 0.1m

Note: Any settings you make on the Transmitter or SMART-BOX will be stored in the VARIO-MODULE only!

Since the VARIO-MODULE can be updated via the USB connection, you always have the latest software and can utilize future functions or languages. Firmware updates for the VARIO-MODULE can be transferred via the DATA or telemetry interface in conjunction with a PC running Windows XP, Vista or 7. For this you also require the USB interface, Order No. 7168.6, and the adapter lead, Order No. 7168.6A, which are available separately.
The programs and files required for this are available from www.graupner.de in the Download area for the corresponding products.

2. MOUNTING THE SENSOR IN THE PLANE
Mount the sensor at an appropriate location in the model. The sensor detects changes in air pressure and calculates the resulting actual altitude. Therefore, make sure that the sensor is wind-protected in the model and is not located directly in the flow of the propeller. Likewise, it must not be mounted on an air-tight place, such in a sealed radio box. The best way to fix the VARIO-MODULE with the mounting tabs or double sided tape on a wind-protected frame in the model, the orientation of the sensor is not important.
Note: the accuracy of the sensor also varies with alterations in ambient air pressure, e.g. due to sudden changes in weather conditions, as well as with changes in air pressure which occur in the course of the day or during an extended flight. It is not uncommon for minor fluctuations in air pressure to affect the accuracy of the sensor to the extent of about 10 to 20 m. These inaccuracies can also be caused by pressure changes inside the fuselage itself (e.g. high pressure due to the forced propeller airflow, or air flowing into the model during a flight).

3. STARTING UP

Connect the VARIO MODULE with the socket marked „T“ of the receiver. The connector system is polarised, look for the small camfer on the edges. Never use force - the plug should engage easily and fully. The sockets are labeled accordingly: black wire (-), red wire (+) and orange wire (S).

Only for transmitters under 1 „exception“ with SMART-BOX:
Install the SMART-BOX at the mounting bracket of the transmitter as shown in the figure. Connect the box then the 3-pin lead to the transmitter. Put one end of the cable into the DATA jack on the transmitter and the other into the jack on the right side of the SMART-BOX. The connector system is polarised, look for the small camfer on the edges. Never use force - the plug should engage easily and fully. The sockets are labeled accordingly: black wire (-), red wire (+) and orange wire (S).

Note: You can connect the VARIO MODULE instead of the receiver directly to the jack on the right side of the SMART-BOX. By doing this, the settings will be sent directly to the VARIO MODULE (without using the radio control system) and the programming is much faster. A power supply for the SMART-BOX is neccessary (3.6 - 9 V), inserted on the left side. The connector system is reverse polarised, look for the small camfer on the edges. Do not use force, the plug should click into place easily. This sockets is labeled accordingly also. The black wire must be down (-), the red top (+).

4. OPERATION

The operation of the VARIO-MODULE is similar to the operation of the transmitter. You should also read the manual of your remote control system, especially the chapter „telemetry“. The operation is done in the transmitter menu „Telemetry“ under the display SETTING AND DATA VIEW. The sensor displays follow the receiver displays (RX), i.e. the „Vario Sensor“ display follows after the last display servo test (RX SERVO TEST). ***Please note***: the menus can only be selected when the receiver is switched on. When you switch the receiver on, it may take a few seconds before the receiver display becomes active and can be selected: > symbol appears at the top right corner of the transmitter display (TX).
There may be a slight delay in the screen’s response to inputs, since all the settings are transmitted directly to the receiver by wireless means.

Operation with the SMART-BOX:
The SMART-BOX is operated by the four buttons on the top. Switch with the ESC and ENTER keys between the different displays. With the DEC and INC buttons you can select the parameters in the display (INC moves the cursor down, DEC up).

Switch on the transmitter. On the startup screen appears SETTING AND DATA VIEW / MODEL SELECT. Move the arrow cursor with the INC or DEC buttons on SETTING AND DATA VIEW and then press ENTER to display the parameters of the transmitter, receiver and telemetry sensors and / or program it, or select MODEL SELECT to display the telemetry data graphically (see point 6). In MODEL SELECT display no changes are possible.

After SETTING AND DATA VIEW have chosen, the VARIO SENSOR display is available. The sensor displays follow the transmitter (TX) and receiver (RX) displays, i.e. the Vario display follows after the last display servo test (RX SERVO TEST).

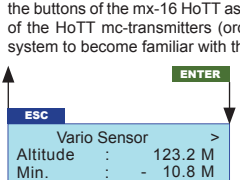
Please note: the menus can only be selected when the receiver is switched on. When you switch the receiver on, it may take a few seconds before the receiver display becomes active and can be selected: > symbol appears at the top right corner of the transmitter display (TX).
There may be a slight delay in the screen’s response to inputs using the top buttons, since all the settings are transmitted directly to the receiver by wireless means.

4.1. Display VARIO SENSOR

Please note: the labeling of the arrows of the following displays corresponds to the keys on top of the SMART-BOX. This assignment is different depending on the remote control system.

SMART-BOX	**mx-12/16/20/32 HoTT**	**mc-19/mc-22/mc-24/mx-24 HoTT**
ENTER	▶	ENTER
ESC	◀	CLEAR
INC	*scroll:* ▼ *value:* ▲	*scroll:* push Rotary + ↻ *value:* Rotary ↻
DEC	*scroll:* ▲ *value:* ▼	*scroll:* push Rotary + ↺ *value:* Rotary ↺
INC+DEC	**SET**	push Rotary

The descriptive text describes also primarily the button layout and operation of the SMART-BOX, followed by the buttons of the mx-16 HoTT as an example in parentheses. Please note that the button layout for example of the HoTT mc-transmitters (order No. 4758, 4759) may differ. Read the manual of your remote control system to become familiar with the telemetry operation.



Parameters which have various setting options in the column Setup, can be modified. If these options are missing, the parameter datas are displayed only.

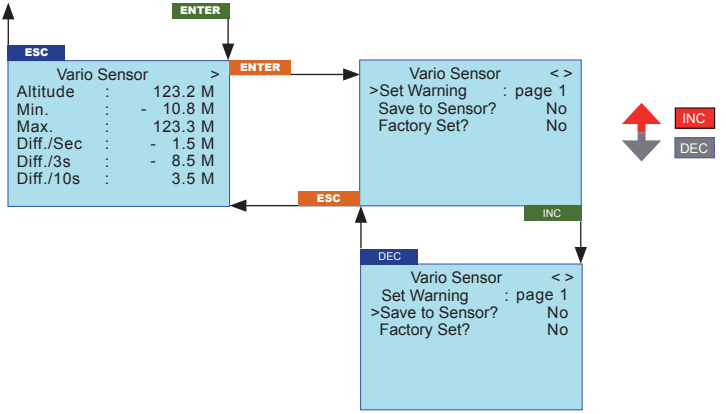
Note: The VARIO MODULE is set to the level 0 m after switching on. The altitude displayed is not the absolute altitude above sea level, but the relative height from the base!

In the first row the climb-/sink rate in meter per second is displayed on demand in synchronization with the warning tones alternating with „Vario sensor“ , the vertical speed in meters per second. Sinking is represented by the negative sign.

Parameter	**Description**	**Setup**
Altitude	Current Altitude (Meter)	-
Min.	Minimum Altitude since the start (Meter)	-
Max.	Maximum Altitude since the start (Meter)	-
Diff. / Sec	Climb-Sink rate (Meter per sec.) - sinking is displayed with neg. sign	-
Diff. / 3s	Climb-Sink rate (Meter per 3 sec.) - sinking is displayed with neg. sign	-
Diff. / 10s	Climb-Sink rate (Meter per 10 sec.) - sinking is displayed with neg. sign	-

If you wish to carry out an adjustment, you must use the INC or DEC buttons (▲ or ▼) above the screen to select the desired parameter (e.g. page 2) by moving the arrow cursor (INC or ▼ moves the cursor down, DEC oder ▲ moves it up). Simultaneously pressing the INC and DEC (**SET**) buttons switches the parameter to be adjusted to inverse video (white on black); this indicates that it can be programmed: pressing the INC (▲) button at this point increases the value, pressing the DEC (▼) button reduces the value. When the adjustment is complete, save the selected setting by pressing the INC and DEC (**SET**) buttons simultaneously; the dark background now disappears in order to confirm this action.

Setup structure - Programming Warning Thresholds:



Parameter	Display-page	Description	Setup
Set Warning	Page 1 – page 7	Parameter Display	Page 1 – page 7
Min. ALT	Page 2	Minimum Altitude	- 500 to 3000 m
Max. ALT	Page 3	Maximum Altitude	- 500 to 3000 m
Negative Difference 1 (Sek.)	Page 4	Sink rate / Sec.	- 50.0 to 0 m
Negative Difference 2 (3 Sek.)	Page 5	Sink rate / 3 Sec.	- 50.0 to 0 m
Positive Difference 1 (Sek.)	Page 6	Climb rate / Sec.	0 to 50.0 m
Positive Difference 2 (3 Sek.)	Page 7	Climb rate / 3 Sec.	0 to 50.0 m
Warning Time	Page 2 – page 7	Warning Time	OFF, 5, 10, 15, 20, 25, 30 sec.
Repeat Time	Page 2 – page 7	Repeat Time	Always, 1, 2, 3, 4, 5 Minutes, One Time
Signal Tone	Page 2 – page 7	Signal Tone	A - Z
Save Sensor	Page 1	Save the setting in the sensor (VARIO-MODULE)	YES / NO
Factory Set	Page 1	Reset to factory settings	YES / NO

Display (Set Warning): shows the various „display pages“ with the possible adjustable parameters and the associated adjustable warning thresholds (page 1, page 2, etc.). To switch between pages, press the INC or DEC key (▲ or ▼).

Factory Set: choosing „YES“, will reset the settings of the variable module to factory settings.

The following parameters can be set separately for all displays:
Warning Time: sets whether and how long the warning signal is activated when reaching a certain value for each display screen.

Repeat Time: sets how often the warning signal is activated when reaching a certain value for each display screen.

Signal Tone: sets the signal tone melody. The warning sounds are combined with the warnings on the display and the voice output. Therefore, they may not be changed.
Overview of the signal tones on page 13.

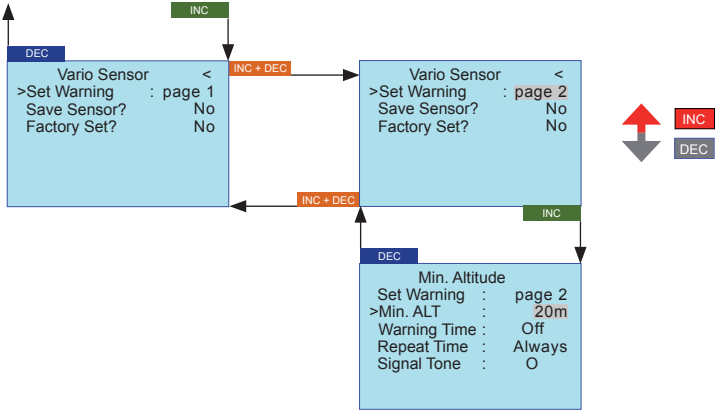
When a warning is activated, the corresponding message (eg. Min. Height) is shown inverted in the first row of the associated display, which then appears alternately with the display VARIO SENSOR and the selected Signal Tone A - Z sounds.
You can stop the warning at any time by pressing one of the buttons on the top of the SMART-BOX.

If you wish to carry out an adjustment (point 4.2 to 4.7) you must use the INC (▲) or DEC (▼) buttons above the screen to select „page 1 - Save Sensor“. Simultaneously pressing the INC and DEC buttons (**SET**) switches the parameter to be adjusted to inverse video (white on black); this indicates that it can be programmed: pressing the INC (▲) button at this point increases the value to YES. When the adjustment is complete, save the selected setting by pressing the INC and DEC buttons (**SET**) simultaneously; the dark background now disappears in order to confirm this action.
If you do not want to save the adjustments, select NO.

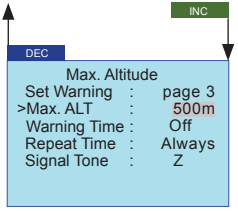
Warning:
- Do not carry out any programming work on the sensors while the model is flying, otherwise there is a real risk that your model will fly out of control while you are not concentrating on it!
- If your model is fitted with two or more receivers, it is absolutely essential that you do not carry out programming work during a flight, as this can alter the settings in the receivers to which no telemetry equipment is connected; in the worst case this could result in the model crashing.
  For this reason always carry out programming on the ground, and check that only the receiver with connected sensors is powered on.

4.2. Minimum Altitude (Page 2)

Minimum Altitude: Minimum altitude of the model during operation, warning threshold set between -500 and +3000 m (based on the starting altitude 0 m)
Factory setting: 20 m, Signal Tone: O

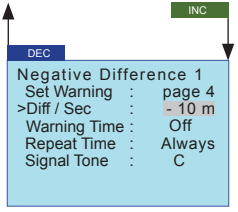


4.3. Maximum Altitude (Page 3)



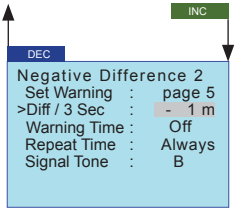
Maximum Altitude: Maximum altitude of the model during operation, warning threshold set between -500 and +3000 m (based on the starting altitude 0 m)
Factory setting: 500 m, Signal Tone: Z

4.4. Sink rate per second (Page 4)



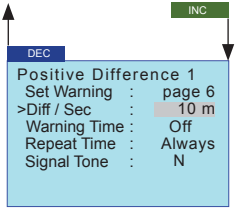
Sink rate/s **(Negative Difference 1):** Sink rate of the model per sec. in Meter, warning threshold set between -50 and 0 m (based on the starting altitude 0 m)
Factory setting: 10 m/Sec., Signal Tone: C

4.5. Sink rate per 3 seconds (Page 5)



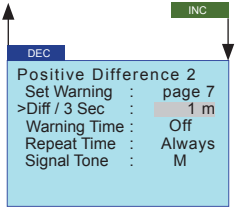
Sink rate/3 s **(Negative Difference 2):** Sink rate of the model per 3 sec. in Meter, warning threshold set between -50 and 0 m (based on the starting altitude 0 m)
Factory setting: 1 m/3 Sec., Signal Tone: B

4.6. Climb rate per second (Page 6)



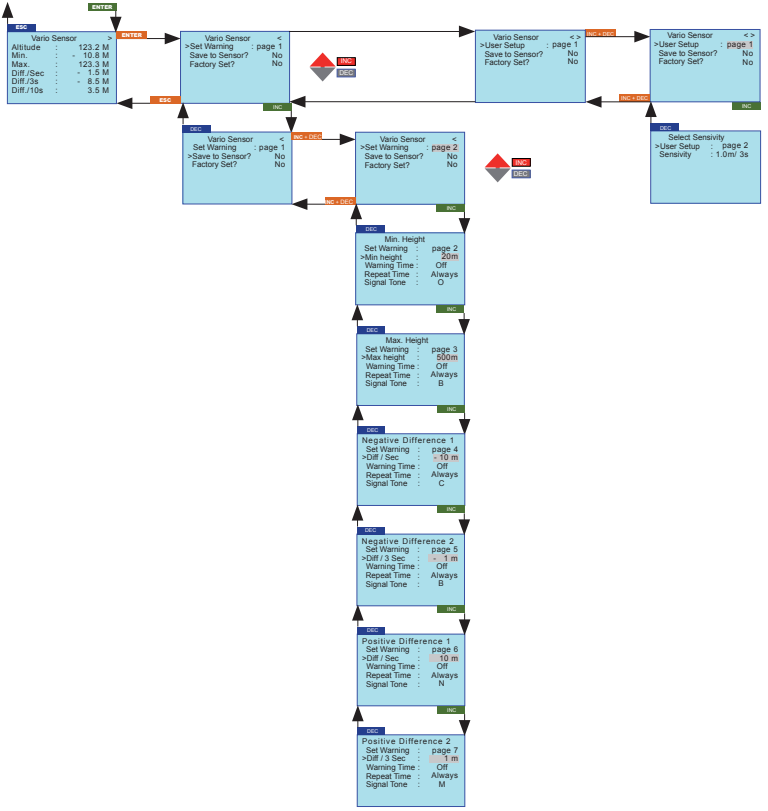
Climb rate/s **(Positive Difference 1):** Climb rate of the model per sec. in Meter, warning threshold set between 0 and 50 m (based on the starting altitude 0 m)
Factory setting: 10 m/Sec., Signal Tone: N

4.7. Climb rate per 3 seconds (Page 7)



Climb rate/3 s **(Positive Difference 2):** Climb rate of the model per 3 sec. in Meter, warning threshold set between 0 and 50 m (based on the starting altitude 0 m)
Factory setting: 1 m/3 Sec., Signal Tone: M

4.9. DISPLAY OVERVIEW:



5. SETUP DISPLAYS

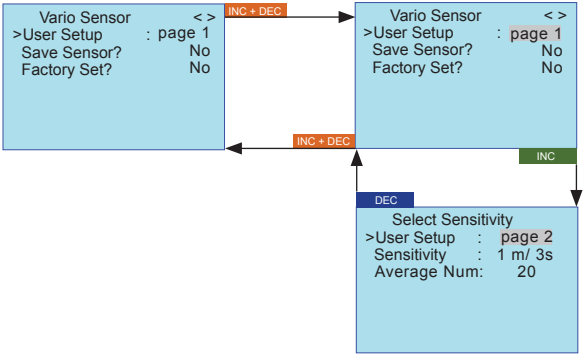
5.1. Vario

The module provides two vario functions:

1. ***Continous Vario:*** is automatically launched when the menu telemetry VOICE TRIGGER, VARIO is a switch has been set and then the graphical display of the ELECTRIC AIR MODULE is activated. This function CONTINOUS VARIO shows the climb or descent of the model permanently by rising or falling beeps.
2. ***Sensitivity Vario (only with the modules M-G1/M-G2, mx-12/16 order No. 4754/4755 or mc-19/22 HoTT 4758/4759) - output only trough modules buzzer:*** The climb or descent rate is predetermined by the parameter sensitivity (SENSITIVITY). The sensitivity must be programmed before operation. You can choose between: (OFF), 0.5 m / sec 3, 1 m / 3 s, 0.5 m / sec,. 1 m / sec. or 3 m / sec. Factory setting is 1 m / sec. *You should use one of these at the same time.*

Sensivity Setup

Select the User Setup display as shown in the diagram. Press the INC and DEC buttons on the SMART-BOX (resp. **SET**) simultaneously and select User Setup page 2. To save the selected settings, go back to page 1 and choose ,Save Sensor, YES.



Parameter	Description	Setup
User Setup	User seup	1 - 2 (page)
Save Sensor	Save the setting in the sensor (VARIO-MODULE)	YES / NO
Factory Set	Reset to factory settings	YES / NO
Sensitivity	Sensitivity - Continous Vario	OFF, 0.5m/3 Sec.; 1 m/3 Sec.; 0.5 m/Sec.; 1m/Sec. oder 3.0 m/Sec. Factory setting 1 m/Sek.
Average Number	Number of measurements of the sensor per Sec.	4 - 40 factory setting: 20

SENSITIVITY: select the climb or sink rate at which the Beep is activated.
Climbing is indicated by a high tone, sinking by a deep tone. The higher / lower the tone sounds, the greater/ smaller is the climb or sink rate.
Note: when SENSITIVITY is set to OFF, no beeps or voice announcements will be displayed.
See the following table.
If the setting is for example 1 m/sec., the tone (A) sounds when the model climbs more than 1 m per second. Is the rate more than 2 m, the next higher note (B) sounds, etc. The actual climb or descent rate is displayed in the Vario screen alternately in the top row. This display responds faster than the „Diff."- information the display below, so the values can differ.

Climbing/sinking tone overview:

Climb rate:		Sink rate:	
5 m (E)	2.5 m/3 sec. ; 5 m/3 sec. 2.5 m/sec. ; 5 m/sec. ; 15 m/sec.	- 1 m	- 0.5 m/3 sec. ; - 1 m/3 sec. - 0.5 m/sec. ; - 1 m/sec. ; - 3 m/sec.
4 m (D)	2 m/3 sec. ; 4 m/3 sec. 2 m/sec. ; 4 m/sec. ; 12 m/sec.	- 2 m	- 1 m/3 sec. ; - 2 m/3 sec. - 1 m/sec. ; - 2 m/sec. ; - 6 m/sec.
3 m (C)	1.5 m/3 sec. ; 3 m/3 sec. 1.5 m/sec. ; 3m/sec.;- 9 m/sec.	- 3 m	- 1.5 m/3 sec. ; - 3 m/3 sec. - 1.5 m/sec. ; - 3m/sec. ; - 9 m/sec.
2 m (B)	1 m/3 sec. ; 2 m/3 sec. 1 m/sec. ; 2 m/sec. ; 6 m/sec.	- 4 m	- 2 m/3 sec. ; - 4 m/3 sec. - 2 m/sec. ; - 4 m/sec. ; - 12 m/sec.
1 m (A)	0.5 m/3 sec. ; 1 m/3 sec. 0.5 m/sec. ; 1 m/sec.;- 3 m/sec.	- 5 m	- 2.5 m/3 sec.; - 5 m/3 sec. - 2.5 m/sec. ; - 5 m/sec. ; - 15 m/sec.

AVERAGE NUMBER: Number of measurements per second, is used to adjust the accuracy of the sensor. More measurements increase the accuracy, while fewer measurements increase display speed.
Recommendation:
Sensivity 0.5 m: approx. 20 measurements per Sec.
Sensivity 1 m: approx. 4 measurements per Sec.

Altitude level Beep:
when the following altitudes (starting from the starting altitude 0 m) are reached, the following tones will sound:
20 / 40 / 60 / 80 / 100 m: low tone once (20 m) up to five times (100 m)
200 / 400 / 650 / 800 / 1000 m: high tone once (200 m) up to five times (1000 m)

6. TELEMETRY DISPLAY
If you select SIMPLE DATAVIEW the telemetry data can only be displayed, i.e. it cannot be programmed - in contrast to SETTING AND DATAVIEW. However, the data is represented in graphic form, and this makes it the preferable option when actually operating a model, as it is easier and quicker to read and assess.

You should also read the manual of your remote control system, especially the chapter „telemetry". The operation is done in the transmitter menu „telemetry" under the display SETTING AND DATA VIEW.
Please note: the menus can only be selected when the receiver is switched on. When you switch the receiver on, it may take a few seconds before the receiver display becomes active and can be selected: > symbol appears at the top right corner of the transmitter display (TX). When the receiver is off, the error message „Can't receive data" appears.
There may be a slight delay in the screen's response to inputs using the top buttons, since all the settings are transmitted directly to the receiver by wireless means.

Operation with the SMART-BOX:
Switch the transmitter on: the start screen of the SMART-BOX displays SETTING AND DATAVIEW / MODEL SELECT. Use the INC or DEC button to move the arrow cursor to MODEL SELECT, then press ENTER to switch to the graphic representation of the telemetry display.

Please note: these menus can only be selected if the receiver is already switched on. After you switch the receiver on, note that it may take several seconds before the display becomes active, and can be selected. There may be a slight delay in the screen's response to inputs using the top buttons, since all the settings are transmitted directly to the receiver by wireless means.

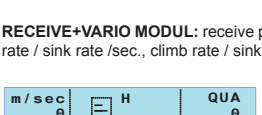
Once you have selected MODEL SELECT, the Smart-Box displays the telemetry menu. You must then select the appropriate sensor using the arrow cursor, depending on whether you are operating a model aircraft (AIRPLANE) or a model car (CAR).
It is possible to select any of the displays, but - as you would expect - the unit can only display those parameters for which sensors are actually installed in the model; all the other parameters display the value 0.

Use the INC (▲) or DEC (▼) button to move the arrow cursor to AIRPLANE (model aircraft) or CAR (model car), then press ENTER (**SET**) to move to the corresponding telemetry display.

In the aircraft display (AIRPLANE) you can use the INC or DEC button to select one of the following graphic displays:

RECEIVER: shows the same data as RX DATAVIEW

RECEIVE+VARIO MODUL: receive performance, actual altitude, min. and max. altitude, temperature, climb rate / sink rate /sec., climb rate / sink rate / 3 sec., climb rate / sink rate / 10 sec.

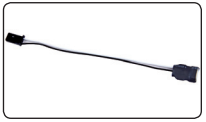


Parameter	Description
ALT	current Altitude
QUA	Signal strength of the signal picked up by the receiver in %
MAX	Maximum Altitude since the start (Meter)
MIN	Mniimum Altitude since the start (Meter)
m/1s	m/1 sec climb / descent - sinking is displayed with neg. sign
m/3s	m/3 sec climb / descent
m/10s	m/10 sec climb / descent

Multiple sensors, for example GPS and General module, can be connected to the receiver via a Y-cable order No. 3936.11 from software version V2.x or higher for the module, receiver and SMART-BOX.
Attention: When using the Y-cable plugged into the telemetry connector on the receiver for connecting multiple sensors, only the SIMPLE DATA VIEW or MODEL SELECT can be used, because only in this mode the sensors are addressed correctly.
The SETTING AND DATAVIEW mode for programming can not be used!
First the sensors must individually programmed, for example directly with the SMART-BOX.

7. Firmware Update VARIO MODULE

Firmware updates for the VARIO MODULE are transferred conjunction with a PC running Windows XP, Vista or 7. For this you also require the USB interface, Order No. 7168.6, the adapter lead, Order No. 7168.6A and a Y-cable Order No. 3936.11 which are available separately.
The programs and files required for this are available from www.graupner.de in the Download area for the corresponding products.
Install the Firmware Update Utility Graupner and the USB drivers on your computer. Check the system requirements!

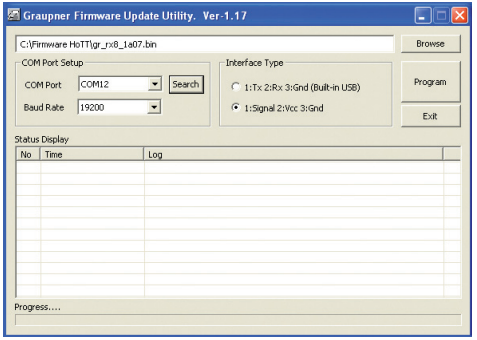


The first step is to cut through the central red wire in the adapter lead, Order No. 7168.6A, then connect the lead to the USB interface, Order No. 7168.6. This socket is also polarised; note the small chamfer on one edge. Never use force - the plug should engage easily and fully.

Connect the VARIO MODULE to one connector of the Y-cable, into the second connector the adapter cable to the USB port is plugged. The signal line (orange) of the remaining plug of the Y-cable must be disabled, simply drag a sharp object into the safety tab of the connector and pull out the orange cable from the case. The so-prepared plug is connected to a free socket of the receiver.

7.1. Update procedure

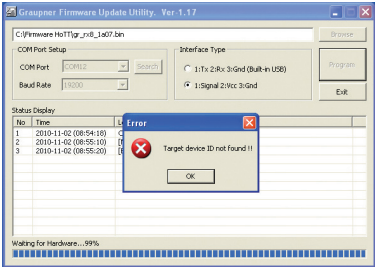
Ensure that the adapter lead is configured as shown in the illustrations, and are connected.
Start the Graupner Firmware Update Utility.

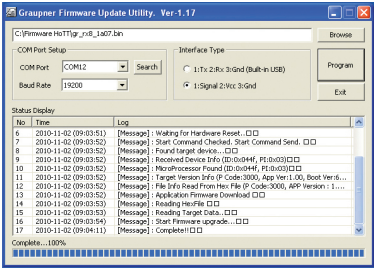


Under [COM Port Setup] select the correct COM port, i.e. the one to which the USB lead is connected. If you are not sure of this, press the button „Search“ and select in the pop-up window „Silicon Labs CP210x USB to UART Bridge“ and press „OK“. Select Baud Rate: 19200. Under [Interface Type] click on Signal 2:Vcc 3:Gnd.
Now click on the “Browse” button and select the folder containing the previously loaded firmware file ending in *.bin. If everything is correct, the file will appear in the corresponding window.
The firmware files are encoded in product-specific form, i.e. if you accidentally select a file which does not match the product (e.g. transmitter update file instead of receiver file), then the pop-up window “Product code error” will appear, and you will not be able to start the update procedure.
Press the “Program” button in the software. Wait briefly until you see movement in the progress bar. This make take up to five seconds, depending on the computer.
Switch on the receiver power supply, so that the receiver and the VARIO-MODULE is powered on.

After a few seconds the Status screen displays the message “Found target device…”; you can now release the button, and the firmware update process commences.
If the device is not recognised, if the pop-up window “Target device ID not found” appears, or if the process fails before 100% is reached, you must restart the update procedure. Repeat all the steps as described above.

The Status display and the Progress bar show the progress of the firmware update. The update is completed when the message “Complete…100%” or “Complete!!” appears.





Switch off the receiver and disconnect all leads.Your VARIO-MODULE is ready to use.

8. SIGNAL TONE OVERVIEW

A

B page 5: sink rate / 3 sec.

C page 4: sink rate / sek.

D

E

F

G

H

I

J

K

L

M page 7: climb rate / 3 sec.

N page 6: climb rate / sec.

O page 2: Minimum altitude

P

Q

R

S

T

U

V

W

X

Y

Z page 3: Maximum altitude

The current version of this manual is available on the Graupner website www.graupner.de under Order No. 33601

EG DECLARATION OF CONFORMITY:

We hereby declare that the following product:

VARIO MODULE order.-nr. 33601

confirms with the essential protective requirements as laid down in the directive for harmonising the statuatory directives of the member states concerning electro-magnetic interference 2004/108/EC.

This product has been tested for electro-magnetic interference in accordance with the following norms:
EN 61000-6-1
EN 61000-6-3

This declaration was produced by
Graupner GmbH & Co. KG
Henriettenstr. 94-96
73230 Kirchheim/Teck

and is valid for the manufacturer / importer of the product

73230 Kirchheim/Teck, den 08.12.2010

Stefan Graupner
Managing Director

Environmental Protection Notes

When this product comes to the end of its useful life, you must not dispose of it in the ordinary domestic waste. The correct method of disposal is to take it to your local collection point for recycling electrical and electronic equipment. The symbol shown here, which may be found on the product itself, in the operating instructions or on the packaging, indicates that this is the case.

Individual markings indicate which materials can be recycled and re-used. You can make an important contribution to the protection of our common environment by re-using the product, recycling the basic materials or recycling redundant equipment in other ways.

Remove batteries from your device and dispose of them at your local collection point for batteries.

In case of R/C models, you have to remove electronic parts like servos, receiver or speed controller from the product in question, and these parts must be disposed of with a corresponding collection point for electrical scrap.

If you don't know the location of your nearest disposal centre, please enquire at your local council office.

Wir gewähren auf dieses Erzeugnis eine / This product is / Sur ce produit nous accordons une

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Garantie-Urkunde

Warranty certificate / Certificate de garantie

33601 Vario-Modul

Übergabedatum
Date of purchase/delivery
Date de remise

Name des Käufers
Owner´s name
Nom de l´achateur

Straße, Wohnort
Complete adress
Domicie et rue

Firmenstempel und Unterschrift des Einzelhändlers
Stamp and signature of dealer
Cachet de la firme et signature du detaillant

Graupner

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33601 / November 2011 - EN V1.6